ClientSPB

Назначаем адрес согласно схеме IP-адресации:

Адрес 100.70.5.55/28

Шлюз 100.70.5.49

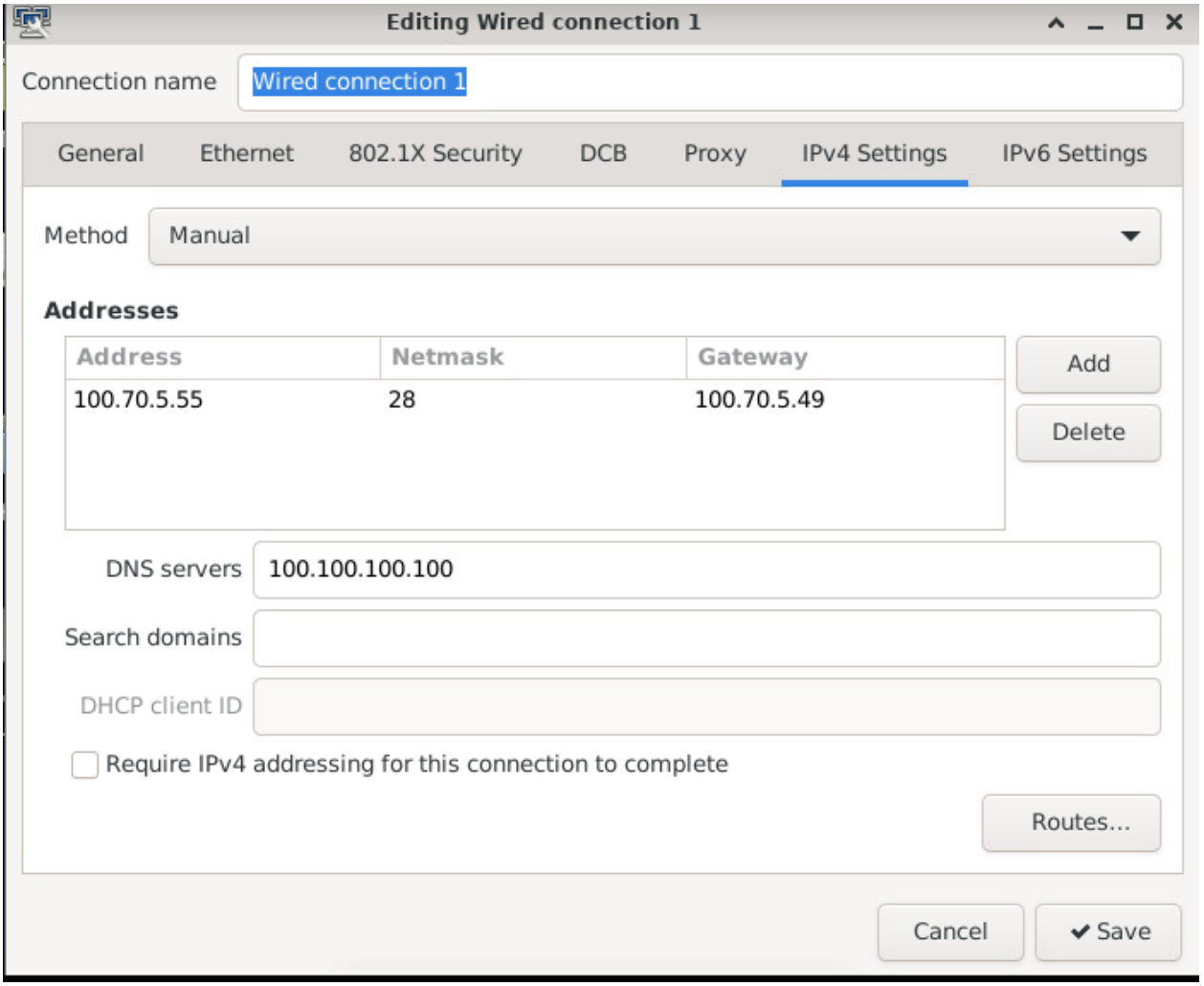
DNS 100.100.100.100

Проверка:

ping 100.101.102.103

ping 8.8.8.8

ping ya.ru



VDS

Назначаем адрес согласно схеме IP-адресации:

Адрес 100.70.6.12/29

Шлюз 100.70.6.9

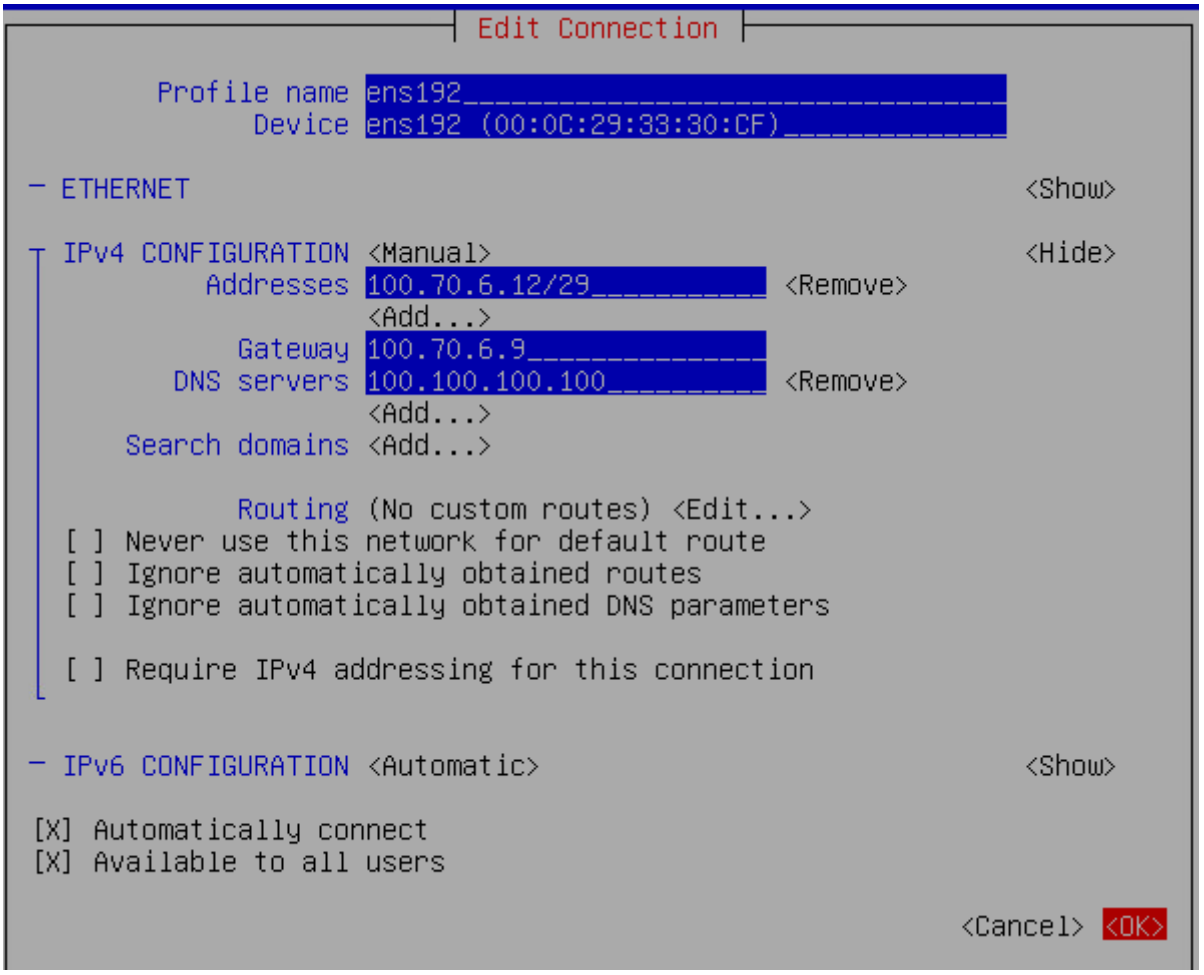
DNS 100.100.100.100

Проверка:

ping 100.101.102.103

ping 8.8.8.8

ping ya.ru



ClientEU

Назначаем адрес согласно схеме IP-адресации:

Адрес 100.70.5.55/28

Шлюз 100.70.5.49

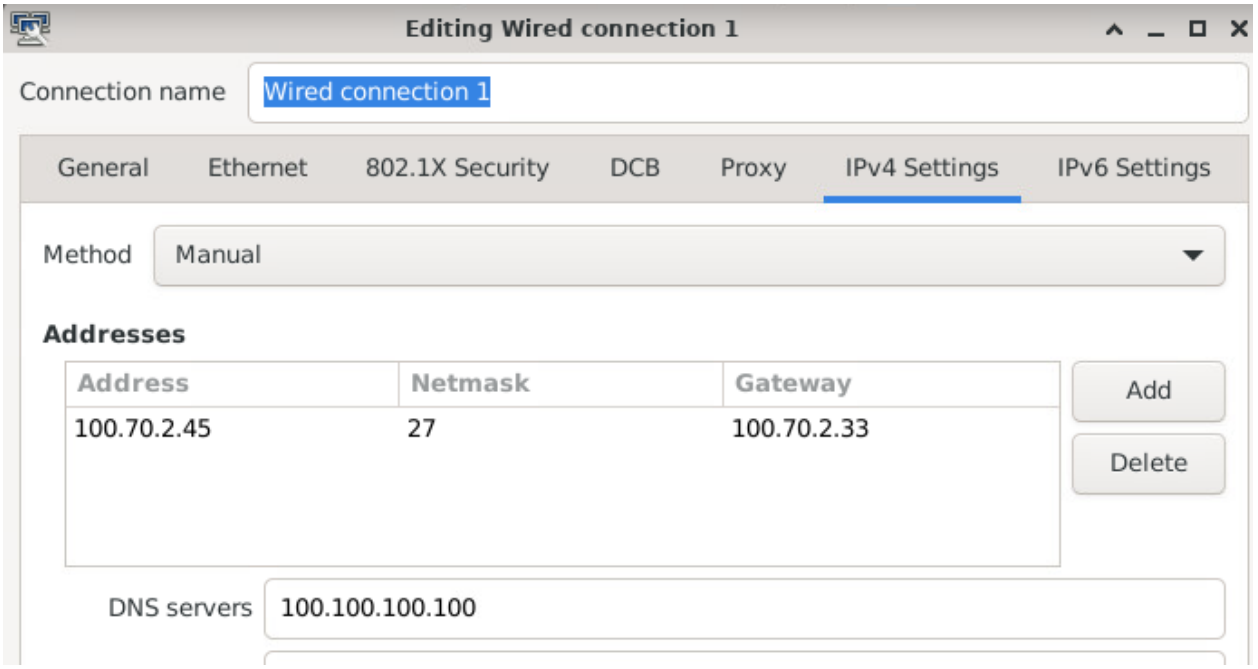
DNS 100.100.100.100

Проверка:

ping 100.101.102.103

ping 8.8.8.8

ping ya.ru



VPNClient

Назначаем адрес согласно схеме IP-адресации:

Адрес 100.70.6.13/29

Шлюз 100.70.6.9

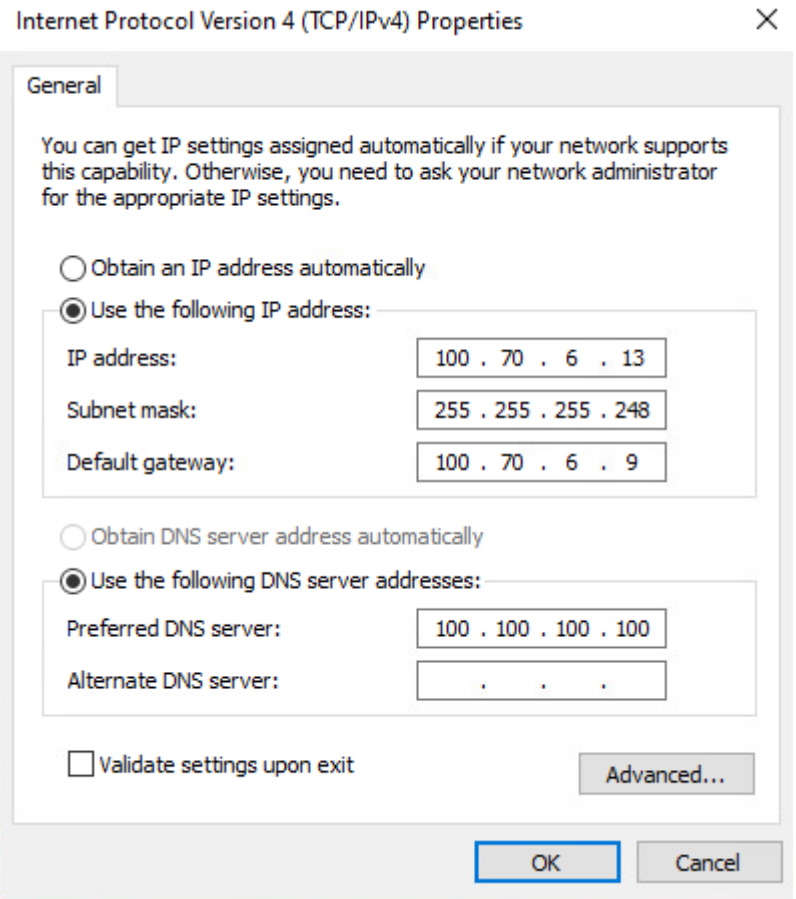
DNS 100.100.100.100

Проверка:

ping 100.101.102.103

ping 8.8.8.8

ping ya.ru



FW-AMS

Выбираем опцию 2 (Set interface IP address)

```
Available interfaces:

1 - LAN (vmx0 - static, track6)
2 - WAN (vmx1 - dhcp, dhcp6)

Enter the number of the interface to configure: 2

Configure IPv4 address WAN interface via DHCP? [Y/n] n

Enter the new WAN IPv4 address. Press <ENTER> for none:
> 100.70.4.18


Subnet masks are entered as bit counts (like CIDR notation).
e.g. 255.255.255.0 = 24
     255.255.0.0   = 16
     255.0.0.0     = 8

Enter the new WAN IPv4 subnet bit count (1 to 32):
> 28

For a WAN, enter the new WAN IPv4 upstream gateway address.
For a LAN, press <ENTER> for none:
> 100.70.4.17
```

```
Do you want to use it as the default IPv4 gateway? [Y/n] y

Do you want to use the gateway as the IPv4 name server, too? [Y/n] n
Enter the IPv4 name server or press <ENTER> for none:
> 100.100.100.100

Configure IPv6 address WAN interface via DHCP6? [Y/n] n

Enter the new WAN IPv6 address. Press <ENTER> for none:
>

Restore web GUI access defaults? [y/N] y
```

Получаем

```
*** OPNsense.localdomain: OPNsense 23.1 ***

 LAN (vmx0)       -> v4: 192.168.1.1/24
 WAN (vmx1)       -> v4: 100.70.4.18/28

  0) Logout                              7) Ping host
  1) Assign interfaces                   8) Shell
  2) Set interface IP address            9) pfTop
  3) Reset the root password            10) Firewall log
  4) Reset to factory defaults          11) Reload all services
  5) Power off system                   12) Update from console
  6) Reboot system                      13) Restore a backup

Enter an option:
```

Выбираем опцию 8 (Shell)

Вводим команду pfctl -d

Выходим из shell командой exit

```
root@OPNsense:~ # pfctl -d
pf disabled
root@OPNsense:~ # exit
```

Проверка

С ClientSPB

через терминал

ping 100.70.4.18

через браузер

http://100.70.4.18

Открываем внешний доступ на FW-MSK

На ClientSPB заходим через браузер 100.70.4.18

Переходим Firewall – Rules – WAN и создаем разрешающее правило

Сохраняем, НО не применяем

Переходим Interfaces – WAN и убираем галочку Block private networks

Сохраняем и применяем настройки

Ждем применения правил. ДОСТУП ПОЛУЧЕН!

Через браузер настраиваем FW-MSK

LAN – 192.168.10.1/24

DMZ – 192.168.20.1/24

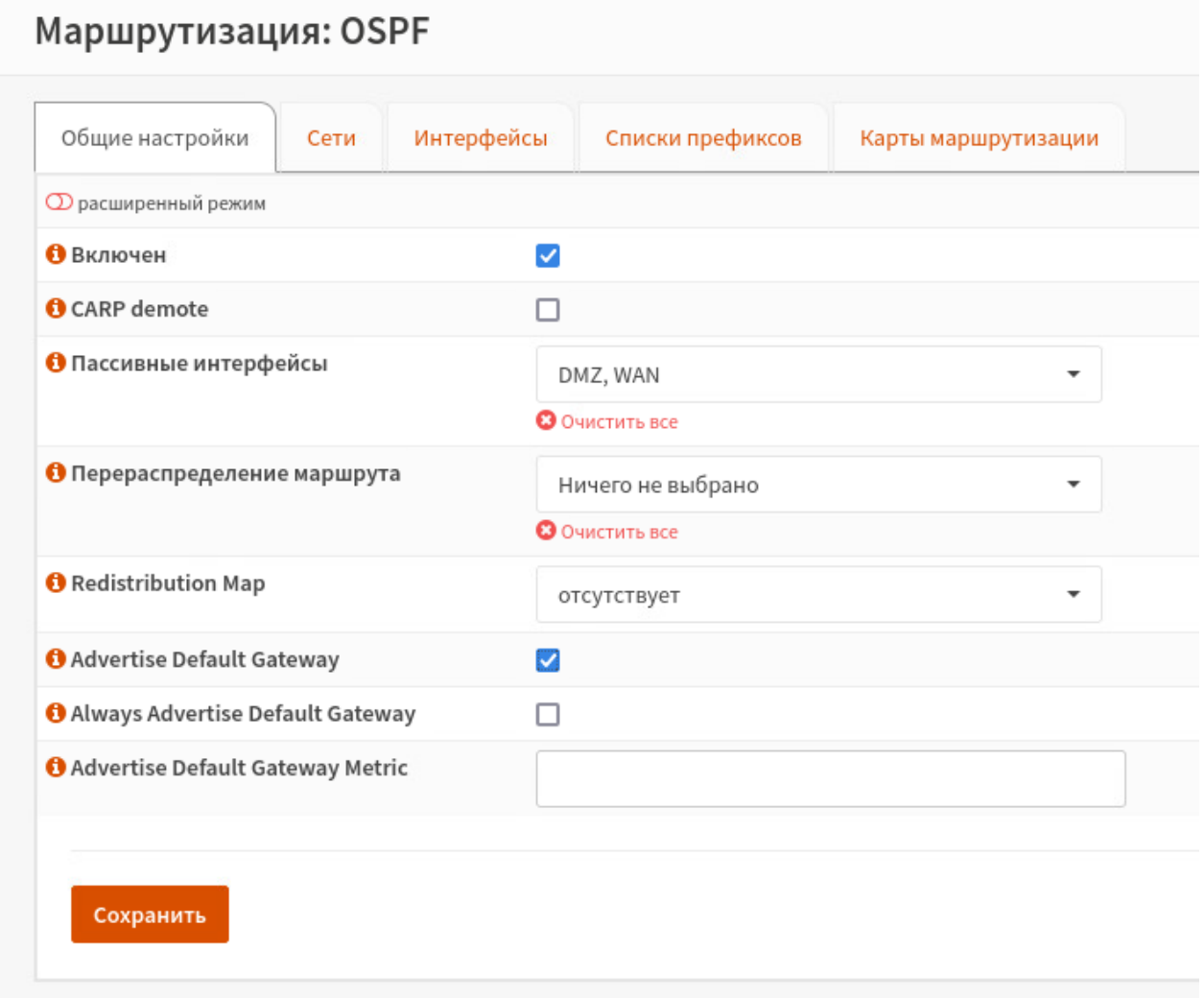
Службы – DHCPv4 – LAN убираем галочку Включен

Обновляем OPNSense (через консоль выбираем опцию 12)

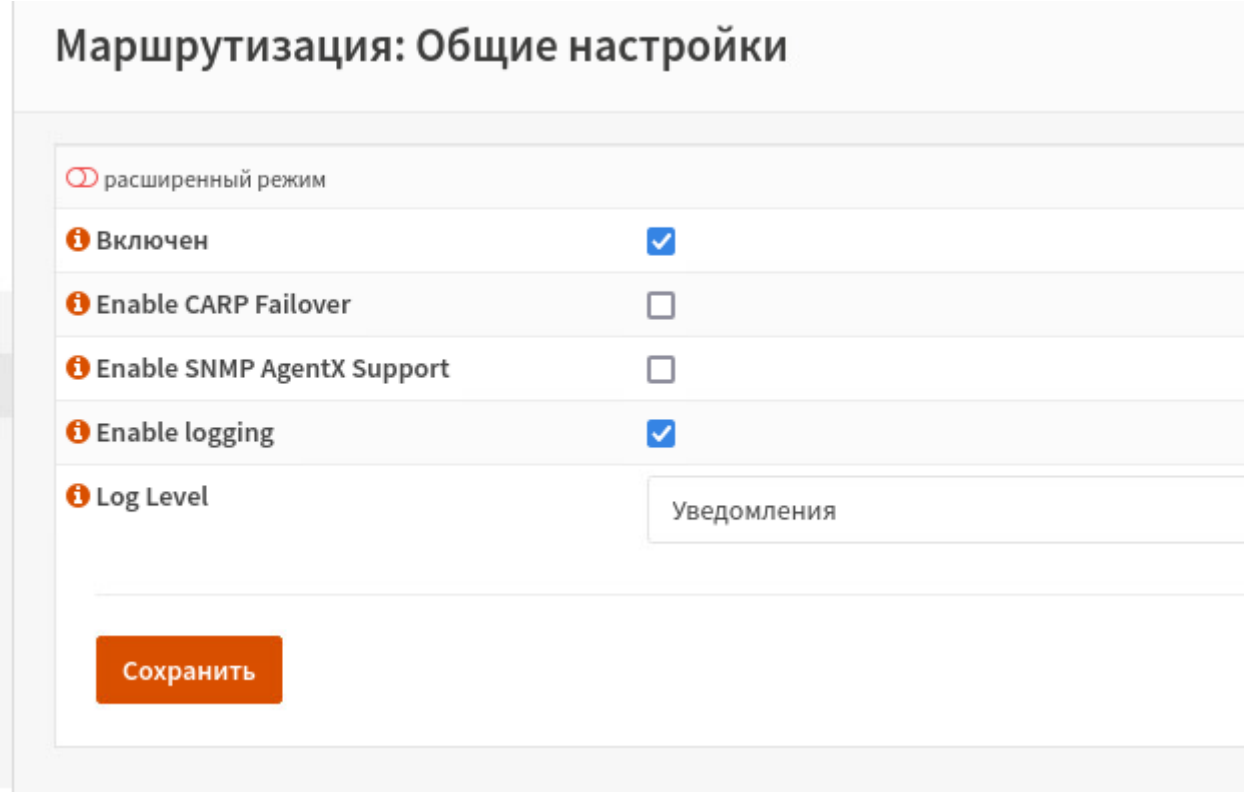
Система – Программное обеспечение – Плагины – os-frr (устанавливаем)

Настраиваем OSPF

Маршрутизация – OSPF



Маршрутизация – Общие настройки



R0

```
configure

show interfaces
edit interfaces ethernet eth0
set address 192.168.10.2/24
set description FW
exit

edit interfaces ethernet eth1
set address 192.168.11.1/24
set description PC
exit

edit interfaces ethernet eth2
set address 192.168.12.1/24
set description PC
exit

commit
save

show interfaces

set protocols ospf area 0 network 192.168.10.0/24
set protocols ospf area 0 network 192.168.11.0/24
set protocols ospf area 0 network 192.168.12.0/24
set protocols ospf interface eth1 passive
set protocols ospf interface eth2 passive
commit
save

show protocols ospf
```

Проверка

exit

show ip ospf route

```
vyos@vyos:~$
vyos@vyos:~$ show ip ospf route
vtysh_pam: Failed in account validation: Success(0)=====
ting table ============
N    192.168.10.0/24       [1] area: 0.0.0.0
                           directly attached to eth0
N    192.168.11.0/24       [1] area: 0.0.0.0
                           directly attached to eth1
N    192.168.12.0/24       [1] area: 0.0.0.0
                           directly attached to eth2

============ OSPF router routing table =============
R    192.168.20.1          [1] area: 0.0.0.0, ASBR
                           via 192.168.10.1, eth0

============ OSPF external routing table ===========
N E2 0.0.0.0/0             [1/10] tag: 0
                           via 192.168.10.1, eth0

vyos@vyos:~$
```

SRV1-MSK

Назначаем адрес согласно принятой схеме IP-адресации:

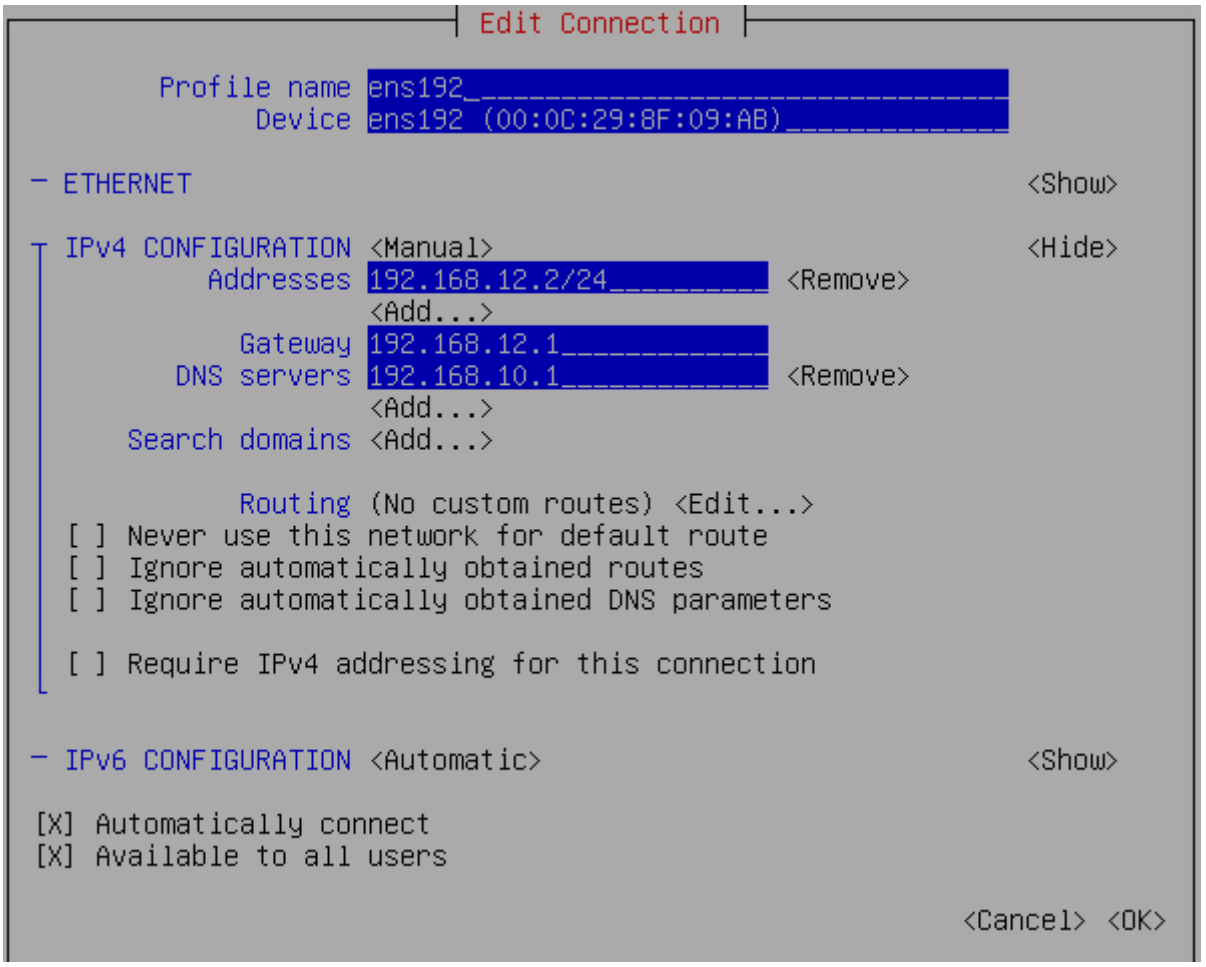
Адрес 192.168.12.2/24

Шлюз 192.168.12.1

DNS 192.168.10.1 (адрес интерфейса LAN на FW-MSK)

Проверка:

ping 192.168.12.1



SRV2-MSK

Назначаем адрес согласно принятой схеме IP-адресации:

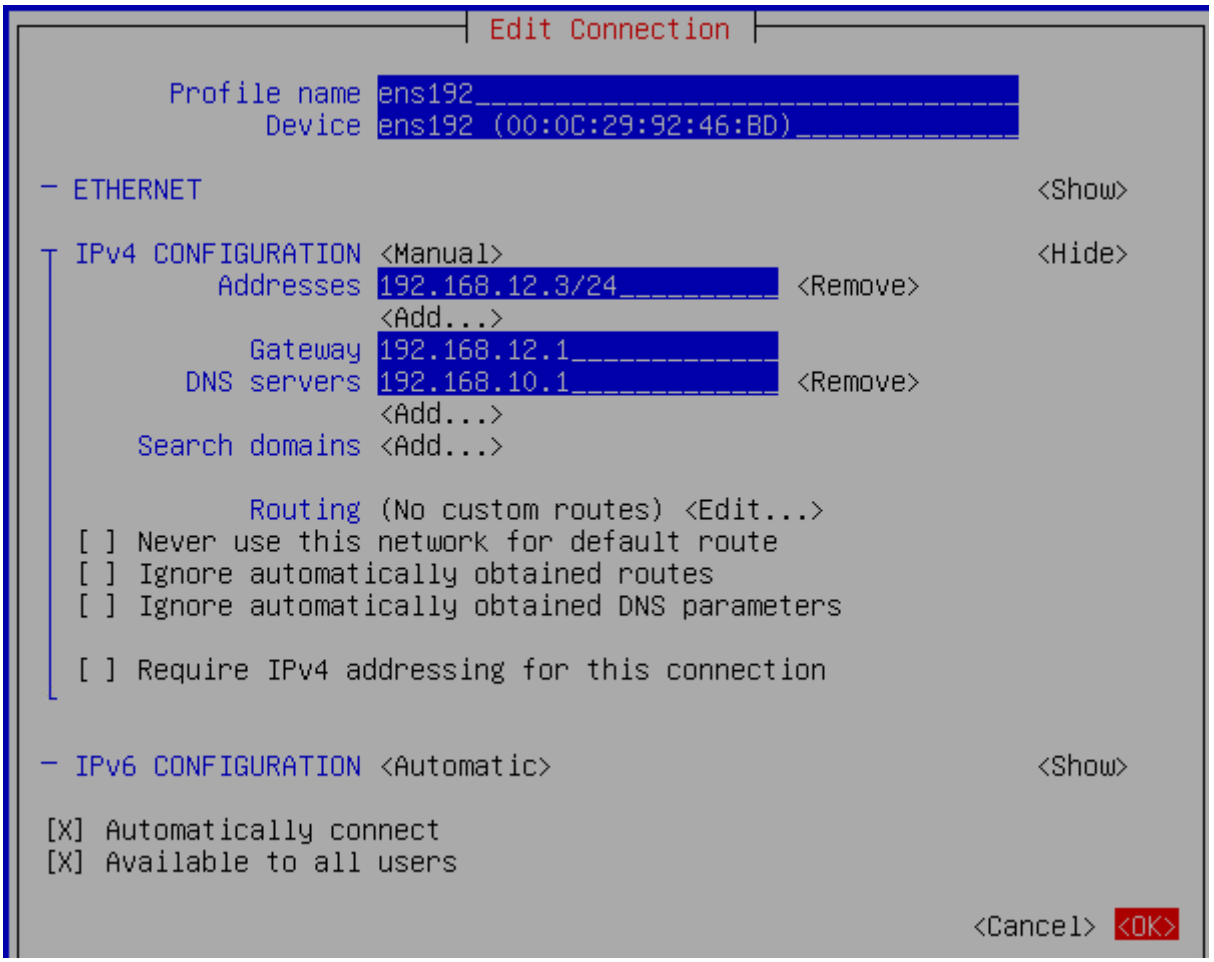
Адрес 192.168.12.3/24

Шлюз 192.168.12.1

DNS 192.168.10.1 (адрес интерфейса LAN на FW-MSK)

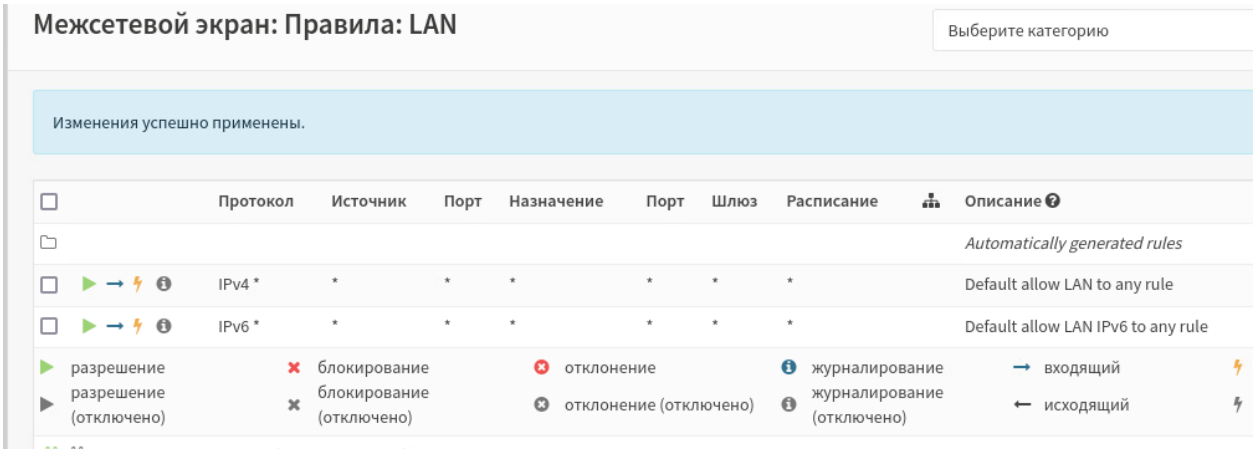
Проверка:

ping 192.168.12.1

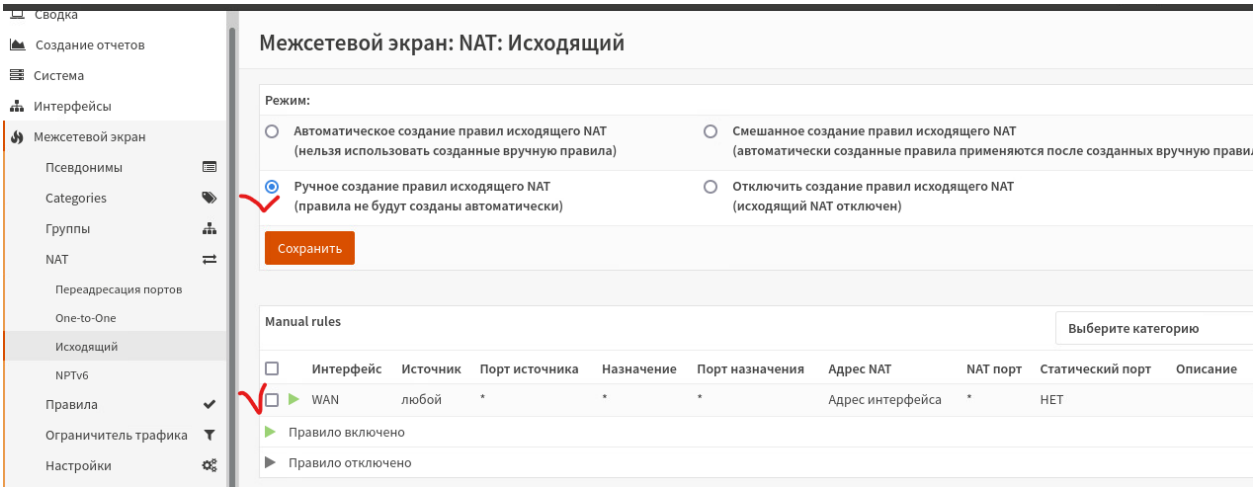


Чтобы клиенты сети LAN-MSK и SRV-MSK имели доступ в интернет, необходимо на FW-MSK подправить правила Межсетевого экрана на интерфейсе LAN, настроить NAT и включить перенаправление DNS запросов

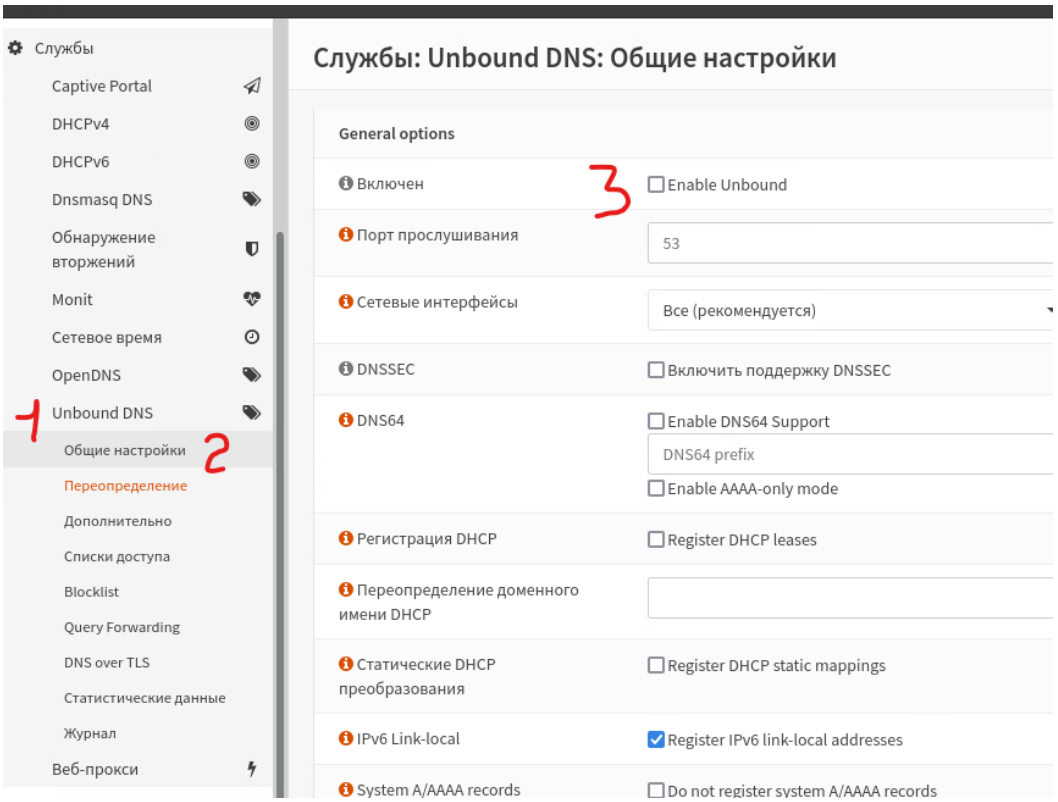
1) Правила Межсетевого экрана на интерфейсе LAN



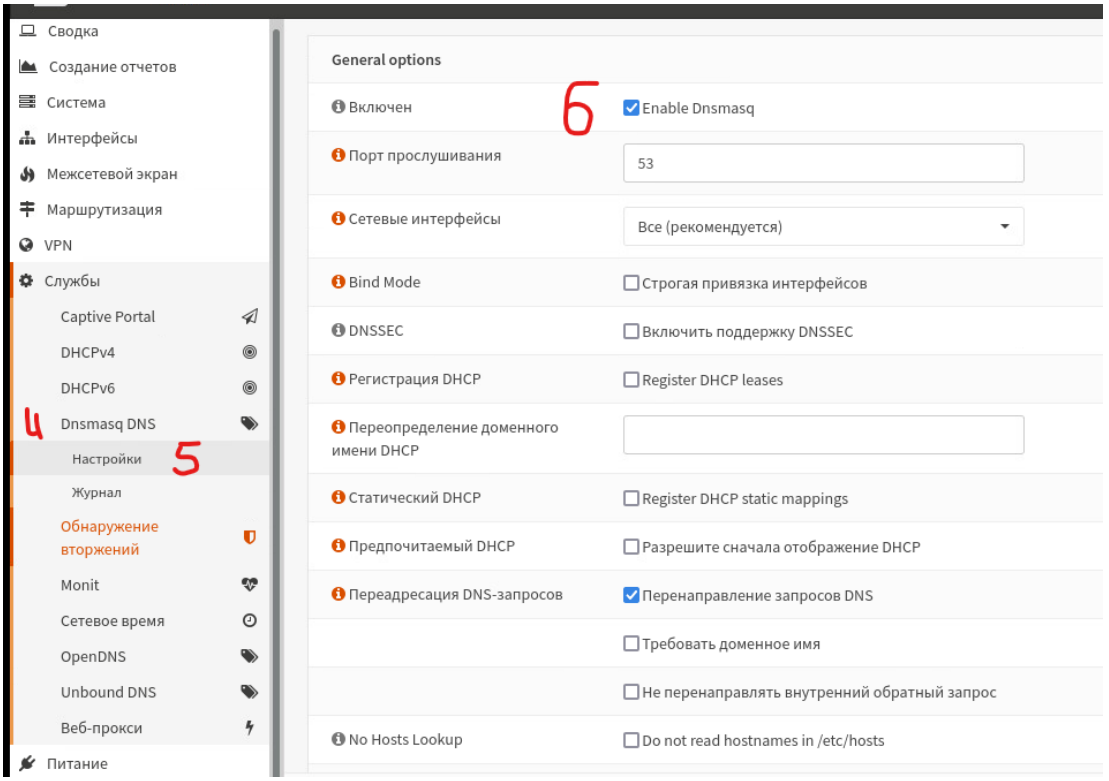
2) Правила NAT



3) Перенаправление DNS запросов



Сохранить настройки



Сохранить настройки

Проверка

На SRV-MSK1 – ping 8.8.8.8 и ping ya.ru

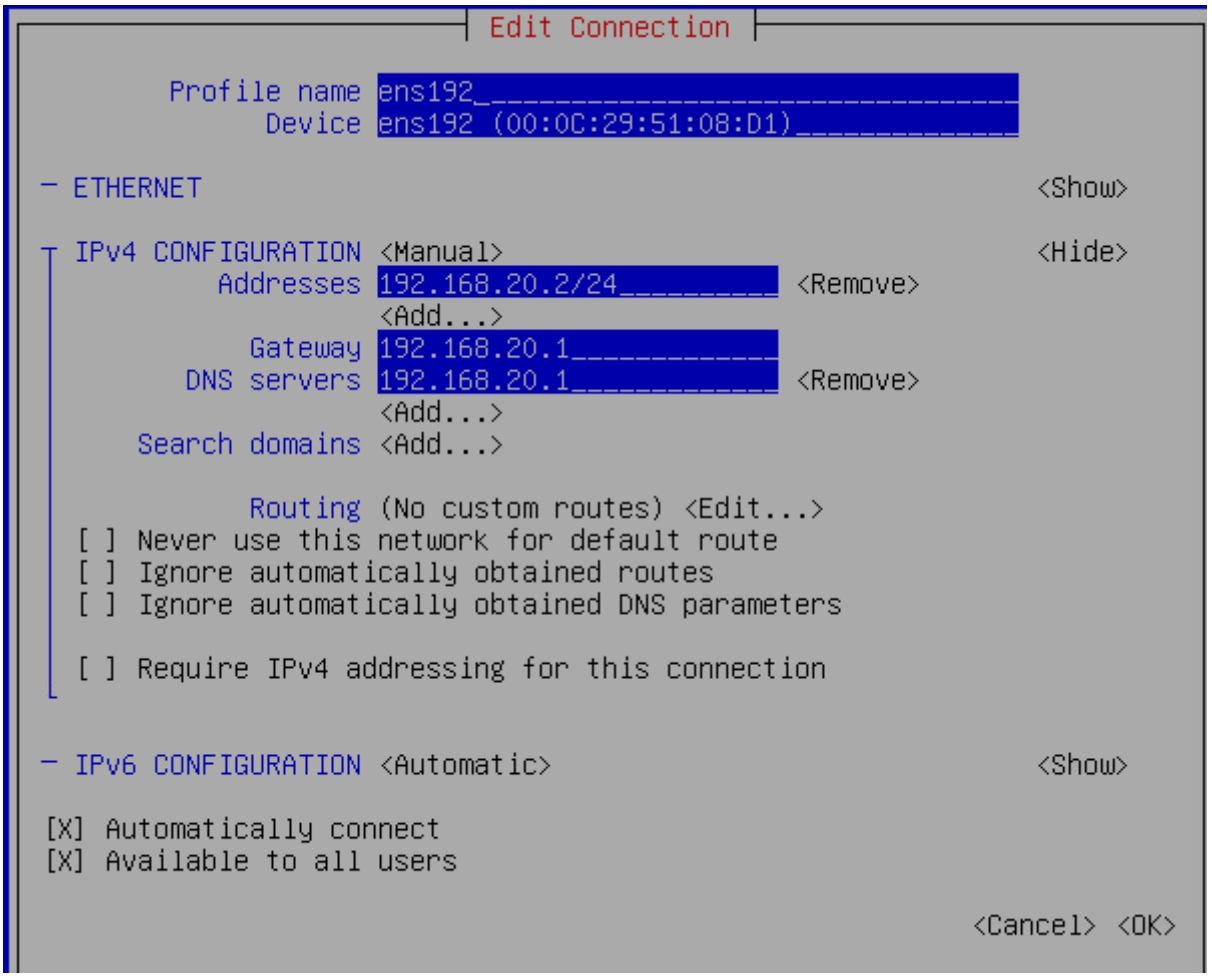
На SRV-MSK2 – ping 8.8.8.8 и ping ya.ru

Назначаем адрес согласно принятой схеме IP-адресации:

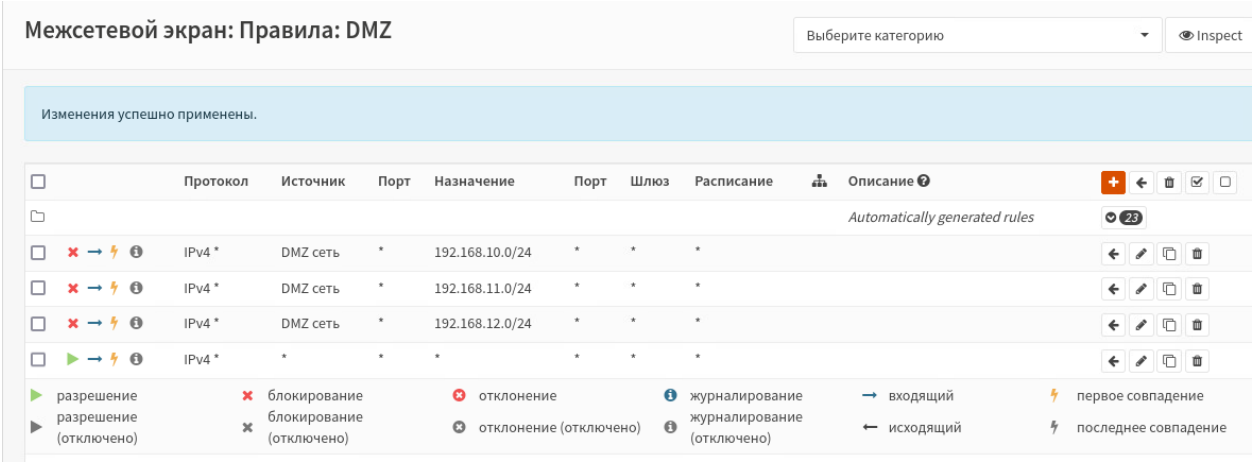
Адрес 192.168.20.2/24

Шлюз 192.168.20.1

DNS 192.168.20.1 (адрес интерфейса DMZ на FW-MSK)



Чтобы клиенты сети DMZ-MSK имели доступ в интернет и не имели доступ к сети LAN-MSK и SRV-MSK, необходимо на FW-MSK создать правило Межсетевого экрана на интерфейсе DMZ



Проверка:

ping 192.168.12.2 – доступа нет

ping 192.168.12.3 – доступа нет

ping 192.168.11.1 – доступа нет

ping 100.100.100.100 – доступ есть

ping ya.ru – доступ есть

Настройка DHCP

SRV1-MSK

nano /etc/apt/sources.list

```
# deb cdrom:[Debian GNU/Linux 11.6.0 _Bullseye_ - Official amd64 DVD Binary-1 20221217-10:40]/ bulls
eye contrib main

#deb cdrom:[Debian GNU/Linux 11.6.0 _Bullseye_ - Official amd64 DVD Binary-1 20221217-10:40]/ bullse
ye contrib main

deb http://deb.debian.org/debian/ bullseye main contrib
deb-src http://deb.debian.org/debian/ bullseye main contrib

# Line commented out by installer because it failed to verify:
deb http://security.debian.org/debian-security bullseye-security main contrib
# Line commented out by installer because it failed to verify:
deb-src http://security.debian.org/debian-security bullseye-security main contrib

# bullseye-updates, to get updates before a point release is made;
# see https://www.debian.org/doc/manuals/debian-reference/ch02.en.html#_updates_and_backports
# A network mirror was not selected during install.  The following entries
# are provided as examples, but you should amend them as appropriate
# for your mirror of choice.
#
deb http://deb.debian.org/debian/ bullseye-updates main contrib
deb-src http://deb.debian.org/debian/ bullseye-updates main contrib
~
```

apt update

apt list --upgradable

apt install isc-dhcp-server

nano /etc/default/isc-dhcp-server

```
# On what interfaces shoul
#       Separate multiple
INTERFACESv4="ens192"
#INTERFACESv6=""
~
```

reboot

nano /etc/dhcp/dhcpd.conf

```
# dhcpd.conf
#
# Sample configuration file for ISC dhcpd
#

# option definitions common to all supported networks...
option domain-name "msk.jun39.wsr";
option domain-name-servers 192.168.10.1;

default-lease-time 600;
max-lease-time 7200;

# The ddns-updates-style parameter controls whether or not th
# attempt to do a DNS update when a lease is confirmed. We de
# behavior of the version 2 packages ('none', since DHCP v2 d
# have support for DDNS.)
ddns-update-style none;
```

```
# No service will be given on this subnet, but declaring it helps the
# DHCP server to understand the network topology.

subnet 192.168.12.0 netmask 255.255.255.0 {
}

# This is a very basic subnet declaration.

subnet 192.168.11.0 netmask 255.255.255.0 {
  range 192.168.11.20 192.168.11.240;
  option routers 192.168.11.1;
  option ntp-servers 192.168.10.1;
}

# This declaration allows BOOTP clients to get dynamic addresses,
# which we don't really recommend.
```

systemctl restart isc-dhcp-server

systemctl status isc-dhcp-server

```
root@SRV1-MSK:~# systemctl status isc-dhcp-server
● isc-dhcp-server.service - LSB: DHCP server
     Loaded: loaded (/etc/init.d/isc-dhcp-server; generated)
     Active: active (running) since Tue 2023-03-28 06:19:59 EDT; 2s ago
       Docs: man:systemd-sysv-generator(8)
    Process: 664 ExecStart=/etc/init.d/isc-dhcp-server start (code=exited, status=0/SUCCESS)
      Tasks: 4 (limit: 1129)
     Memory: 4.5M
        CPU: 43ms
     CGroup: /system.slice/isc-dhcp-server.service
             └─679 /usr/sbin/dhcpd -4 -q -cf /etc/dhcp/dhcpd.conf ens192

Mar 28 06:19:57 SRV1-MSK systemd[1]: Starting LSB: DHCP server...
```

R0

configure

set service dhcp-relay interface eth1

set service dhcp-relay interface eth2

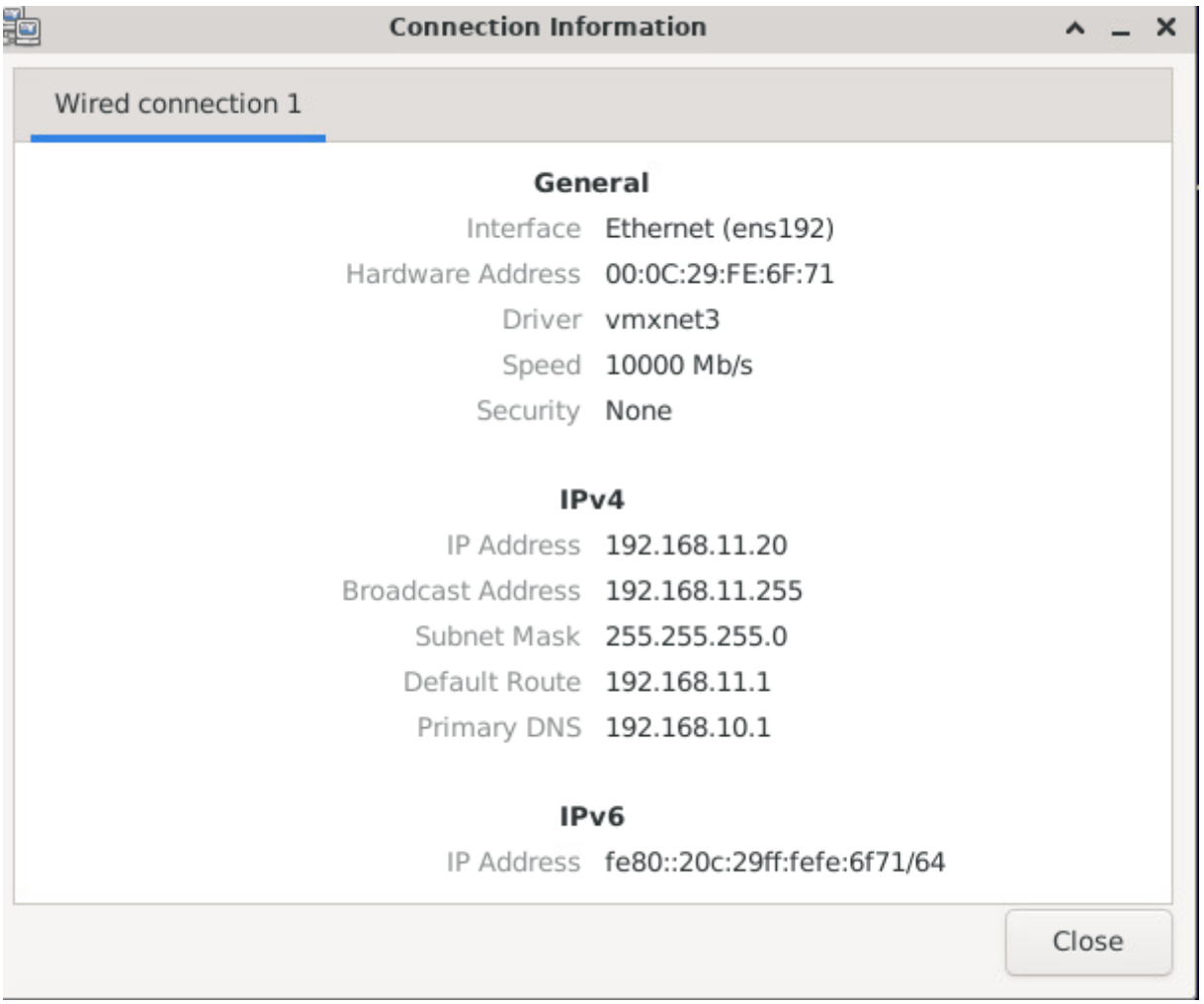
set service dhcp-relay server 192.168.12.2

commit

save

PC-MSK

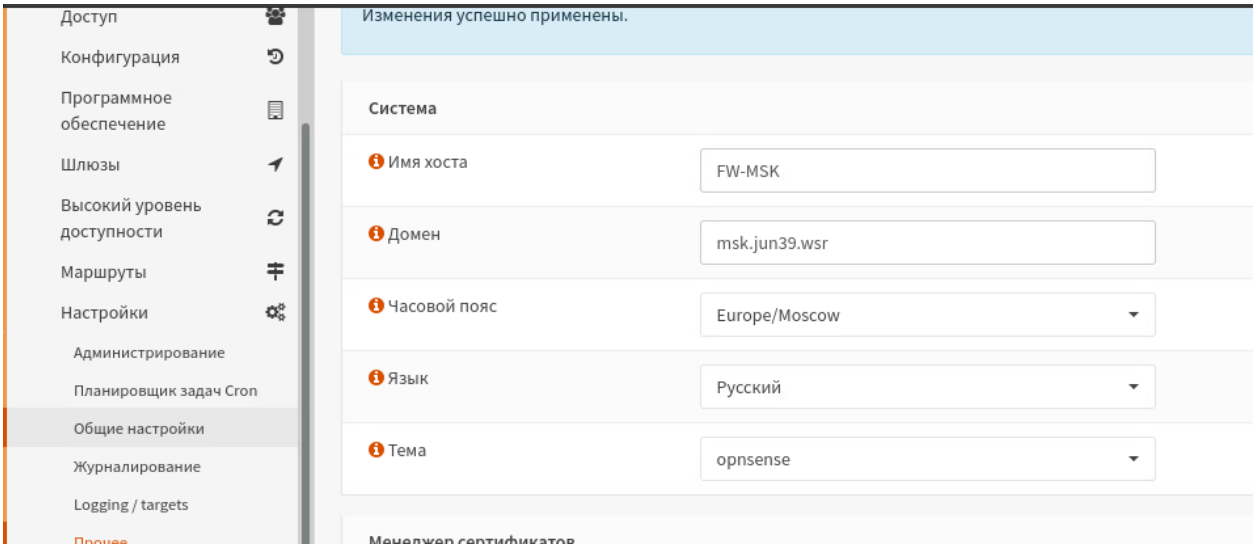
Пробуем получить адрес по DHCP



ping ya.ru

Настройка имени, доменного имени, часового пояса

FW-MSK



SRV1-MSK

hostnamectl set-hostname SRV1-MSK.msk.jun39.wsr

timedatectl set-timezone Europe/Moscow

SRV2-MSK

hostnamectl set-hostname SRV2-MSK.msk.jun39.wsr

timedatectl set-timezone Europe/Moscow

PC-MSK

hostnamectl set-hostname PC-MSK.msk.jun39.wsr

timedatectl set-timezone Europe/Moscow

R0

configure

set system host-name R0-MSK

set system domain-name msk.jun39.wsr

set system time-zone Europe/Moscow

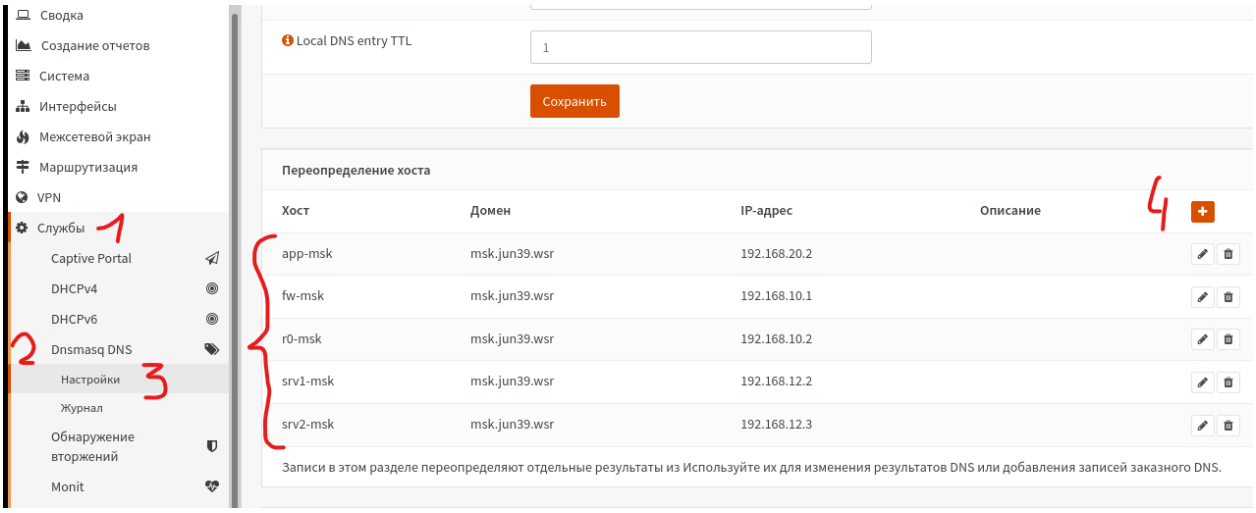
```
set service ntp server 192.168.10.1
commit
save
```

APP-MSK

```
hostnamectl set-hostname APP-MSK.msk.jun39.wsr
timedatectl set-timezone Europe/Moscow
```

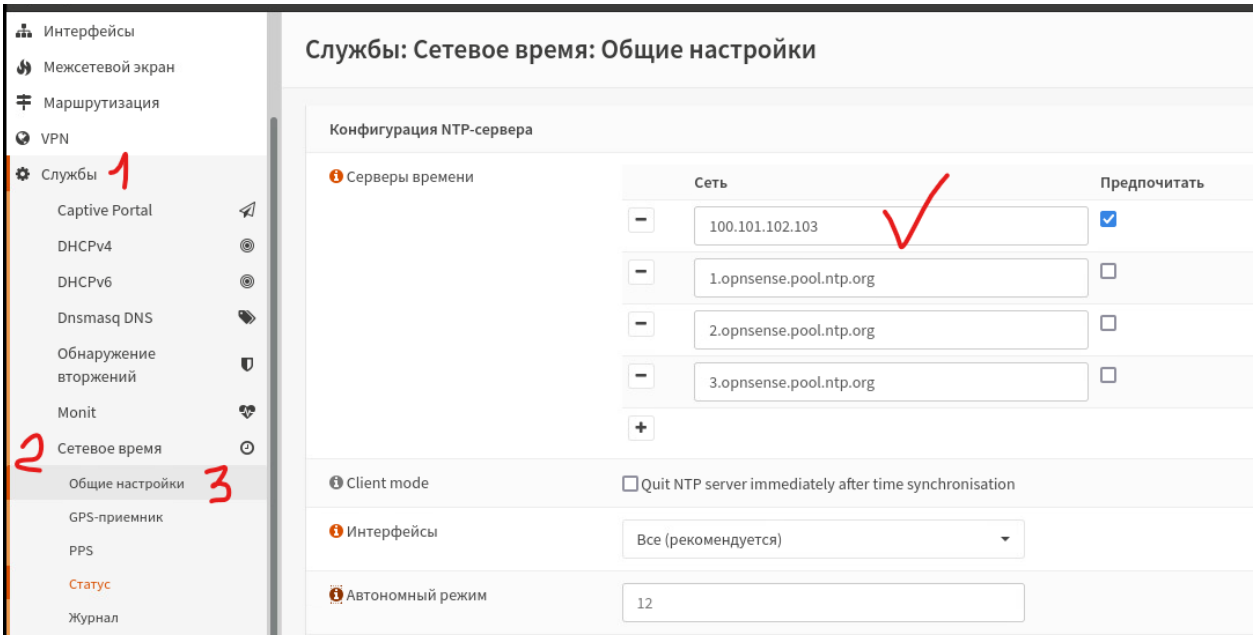
Все устройства должны быть доступны в локальных сетях всех филиалов по именам в соответствии с топологией

FW-MSK



Настройка синхронизации времени

FW-MSK



SRV1-MSK

apt install chrony

nano /etc/chrony/chrony.conf

```
# Use Debian vendor zone.
pool 192.168.10.1 iburst
```

systemctl restart chrony

systemctl status chrony

Проверка

chronyc tracking

```
root@SRV1-MSK:~# chronyc tracking
Reference ID    : C0A80A01 (FW-MSK)
Stratum         : 4
Ref time (UTC)  : Wed Mar 29 04:55:46 2023
System time     : 0.000006323 seconds fast of NTP time
Last offset     : +0.000013660 seconds
RMS offset      : 0.000013660 seconds
Frequency       : 7.824 ppm slow
Residual freq   : -10.862 ppm
Skew            : 49.836 ppm
Root delay      : 0.014233872 seconds
Root dispersion : 0.942363620 seconds
Update interval : 2.0 seconds
Leap status     : Normal
root@SRV1-MSK:~#
```

SRV2-MSK

nano /etc/apt/sources.list

```
# deb cdrom:[Debian GNU/Linux 11.6.0 _Bullseye_ - Official amd64 DVD Binary-1 20221217-10:40]/ bulls
eye contrib main

#deb cdrom:[Debian GNU/Linux 11.6.0 _Bullseye_ - Official amd64 DVD Binary-1 20221217-10:40]/ bullse
ye contrib main

deb http://deb.debian.org/debian/ bullseye main contrib
deb-src http://deb.debian.org/debian/ bullseye main contrib

# Line commented out by installer because it failed to verify:
deb http://security.debian.org/debian-security bullseye-security main contrib
# Line commented out by installer because it failed to verify:
deb-src http://security.debian.org/debian-security bullseye-security main contrib

# bullseye-updates, to get updates before a point release is made;
# see https://www.debian.org/doc/manuals/debian-reference/ch02.en.html#_updates_and_backports
# A network mirror was not selected during install.  The following entries
# are provided as examples, but you should amend them as appropriate
# for your mirror of choice.
#
deb http://deb.debian.org/debian/ bullseye-updates main contrib
deb-src http://deb.debian.org/debian/ bullseye-updates main contrib
~
```

apt update

apt list --upgradable

apt install chrony

nano /etc/chrony/chrony.conf

```
# Use Debian vendor zone.
pool 192.168.10.1 iburst
```

systemctl restart chrony

systemctl status chrony

Проверка

chronyc tracking

```
root@SRV2-MSK:~# systemctl restart chrony
root@SRV2-MSK:~# chronyc tracking
Reference ID    : C0A80A01 (FW-MSK)
Stratum         : 4
Ref time (UTC)  : Wed Mar 29 05:07:53 2023
System time     : 0.000012959 seconds fast of NTP time
Last offset     : +0.000014464 seconds
RMS offset      : 0.000014464 seconds
Frequency       : 16.941 ppm slow
Residual freq   : +9.212 ppm
Skew            : 1000000.000 ppm
Root delay      : 0.013393632 seconds
Root dispersion : 0.985263109 seconds
Update interval : 2.0 seconds
Leap status     : Normal
```

APP-MSK

nano /etc/apt/sources.list

```
# deb cdrom:[Debian GNU/Linux 11.6.0 _Bullseye_ - Official amd64 DVD Binary-1 20221217-10:40]/ bulls
eye contrib main

#deb cdrom:[Debian GNU/Linux 11.6.0 _Bullseye_ - Official amd64 DVD Binary-1 20221217-10:40]/ bullse
ye contrib main

deb http://deb.debian.org/debian/ bullseye main contrib
deb-src http://deb.debian.org/debian/ bullseye main contrib

# Line commented out by installer because it failed to verify:
deb http://security.debian.org/debian-security bullseye-security main contrib
# Line commented out by installer because it failed to verify:
deb-src http://security.debian.org/debian-security bullseye-security main contrib

# bullseye-updates, to get updates before a point release is made;
# see https://www.debian.org/doc/manuals/debian-reference/ch02.en.html#_updates_and_backports
# A network mirror was not selected during install.  The following entries
# are provided as examples, but you should amend them as appropriate
# for your mirror of choice.
#
deb http://deb.debian.org/debian/ bullseye-updates main contrib
deb-src http://deb.debian.org/debian/ bullseye-updates main contrib
~
```

apt update

apt list --upgradable

apt install chrony

nano /etc/chrony/chrony.conf

```
# Use Debian vendor zone.
pool 192.168.20.1 iburst
```

systemctl restart chrony

systemctl status chrony

Проверка

chronyc tracking

```
root@APP-MSK:~# chronyc tracking
Reference ID    : C0A81401 (192.168.20.1)
Stratum         : 4
Ref time (UTC)  : Wed Mar 29 07:02:21 2023
System time     : 0.000000020 seconds slow of NTP time
Last offset     : +0.000177241 seconds
RMS offset      : 0.000928455 seconds
Frequency       : 15.687 ppm slow
Residual freq   : +0.051 ppm
Skew            : 4.683 ppm
Root delay      : 0.014183724 seconds
Root dispersion : 0.017890921 seconds
Update interval : 64.5 seconds
Leap status     : Normal
root@APP-MSK:~# _
```

ClientSPB

timedatectl set-timezone Europe/Moscow

nano /etc/apt/sources.list

```
Terminal -
File  Edit  View  Terminal  Tabs  Help
  GNU nano 5.4                                        /etc/apt/sources.list
# deb cdrom:[Debian GNU/Linux 11.6.0 _Bullseye_ - Official amd64 DVD Binary-1 20221217
deb http://deb.debian.org/debian bullseye main contrib
# Line commented out by installer because it failed to verify:
deb-src http://deb.debian.org/debian bullseye main contrib

#deb cdrom:[Debian GNU/Linux 11.6.0 _Bullseye_ - Official amd64 DVD Binary-1 20221217-

# Line commented out by installer because it failed to verify:
deb http://security.debian.org/debian-security bullseye-security main contrib
# Line commented out by installer because it failed to verify:
deb-src http://security.debian.org/debian-security bullseye-security main contrib
```

apt update

apt list --upgradable

apt install chrony

nano /etc/chrony/chrony.conf

```
# Use Debian vendor zone.
pool 100.101.102.103 iburst
```

systemctl restart chrony

systemctl status chrony

Проверка

chronyc tracking

timedatectl

```
root@ClientSPB:~# chronyc tracking
Reference ID    : 64656667 (100.101.102.103)
Stratum         : 3
Ref time (UTC)  : Wed Mar 29 07:33:27 2023
System time     : 0.000000021 seconds fast of NTP time
Last offset     : -0.000019771 seconds
RMS offset      : 0.000019771 seconds
Frequency       : 15.627 ppm slow
Residual freq   : -13.187 ppm
Skew            : 0.270 ppm
Root delay      : 0.013304343 seconds
Root dispersion : 0.002518897 seconds
Update interval : 2.0 seconds
Leap status     : Normal
root@ClientSPB:~#
```

```
root@ClientSPB:~# timedatectl
               Local time: Wed 2023-03-29 10:36:57 MSK
           Universal time: Wed 2023-03-29 07:36:57 UTC
                 RTC time: Wed 2023-03-29 07:36:57
                Time zone: Europe/Moscow (MSK, +0300)
System clock synchronized: yes
              NTP service: active
          RTC in local TZ: no
root@ClientSPB:~#
```

VDS

timedatectl set-timezone Asia/Yekaterinburg

nano /etc/apt/sources.list

```
# deb cdrom:[Debian GNU/Linux 11.6.0 _Bullseye_ - Official amd64 DVD Binary-1 20221217-10:40]/ bulls
eye contrib main

#deb cdrom:[Debian GNU/Linux 11.6.0 _Bullseye_ - Official amd64 DVD Binary-1 20221217-10:40]/ bullse
ye contrib main

deb http://deb.debian.org/debian/ bullseye main contrib
deb-src http://deb.debian.org/debian/ bullseye main contrib

# Line commented out by installer because it failed to verify:
deb http://security.debian.org/debian-security bullseye-security main contrib
# Line commented out by installer because it failed to verify:
deb-src http://security.debian.org/debian-security bullseye-security main contrib

# bullseye-updates, to get updates before a point release is made;
# see https://www.debian.org/doc/manuals/debian-reference/ch02.en.html#_updates_and_backports
# A network mirror was not selected during install.  The following entries
# are provided as examples, but you should amend them as appropriate
# for your mirror of choice.
#
deb http://deb.debian.org/debian/ bullseye-updates main contrib
deb-src http://deb.debian.org/debian/ bullseye-updates main contrib
~
```

apt update

apt list --upgradable

apt install chrony

nano /etc/chrony/chrony.conf

```
# Use Debian vendor zone.
pool 100.101.102.103 iburst
```

systemctl restart chrony

systemctl status chrony

Проверка

chronyc tracking

timedatectl

```
root@VDS:~# systemctl restart chrony
root@VDS:~# chronyc tracking
Reference ID    : 64656667 (100.101.102.103)
Stratum         : 3
Ref time (UTC)  : Wed Mar 29 07:45:41 2023
System time     : 0.000000463 seconds fast of NTP time
Last offset     : -0.000876777 seconds
RMS offset      : 0.000876777 seconds
Frequency       : 23.354 ppm slow
Residual freq   : -1.616 ppm
Skew            : 1000000.000 ppm
Root delay      : 0.013332226 seconds
Root dispersion : 1.731365204 seconds
Update interval : 0.0 seconds
Leap status     : Normal
root@VDS:~# _
```

```
root@VDS:~# timedatectl
               Local time: Wed 2023-03-29 12:46:16 +05
           Universal time: Wed 2023-03-29 07:46:16 UTC
                 RTC time: Wed 2023-03-29 07:46:17
                Time zone: Asia/Yekaterinburg (+05, +0500)
System clock synchronized: yes
              NTP service: active
          RTC in local TZ: no
root@VDS:~#
```

Сетевое обнаружение по протоколу LLDP

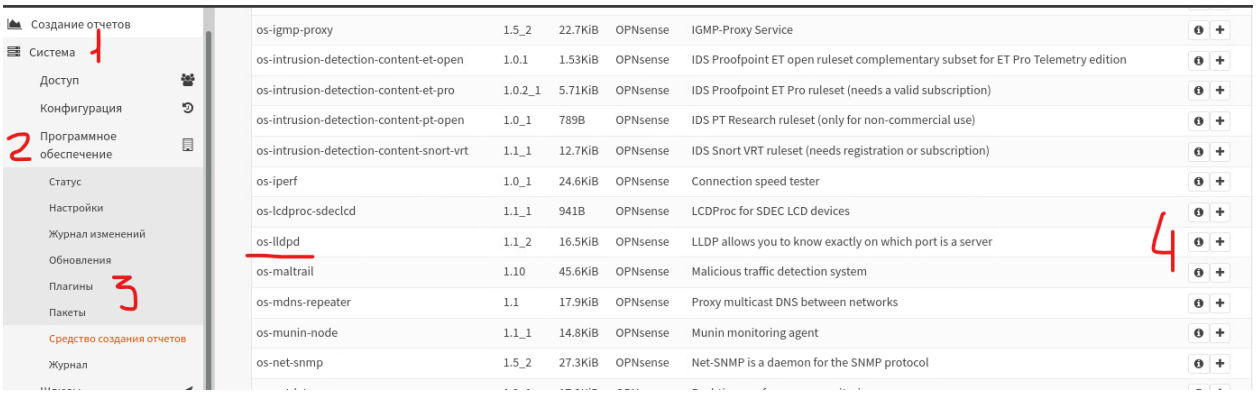
SRV1-MSK, SRV2-MSK, APP-MSK

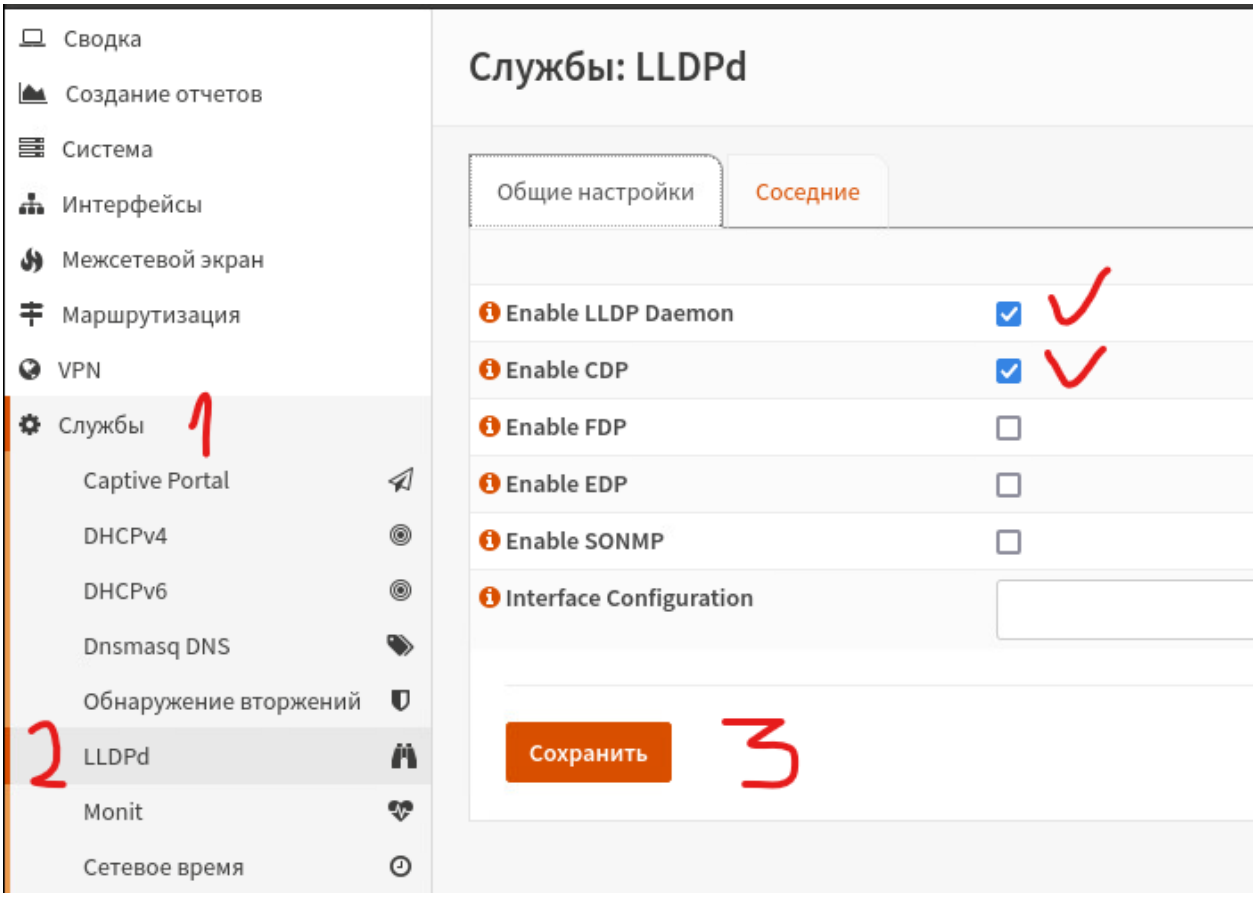
apt install lldpd

Проверка

llpdctl

FW-MSK





R0

configure
set service lldp
commit
save

Проверка
show lldp neighbors

Удаленный доступ по SSH

R0

configure

set service ssh port 22

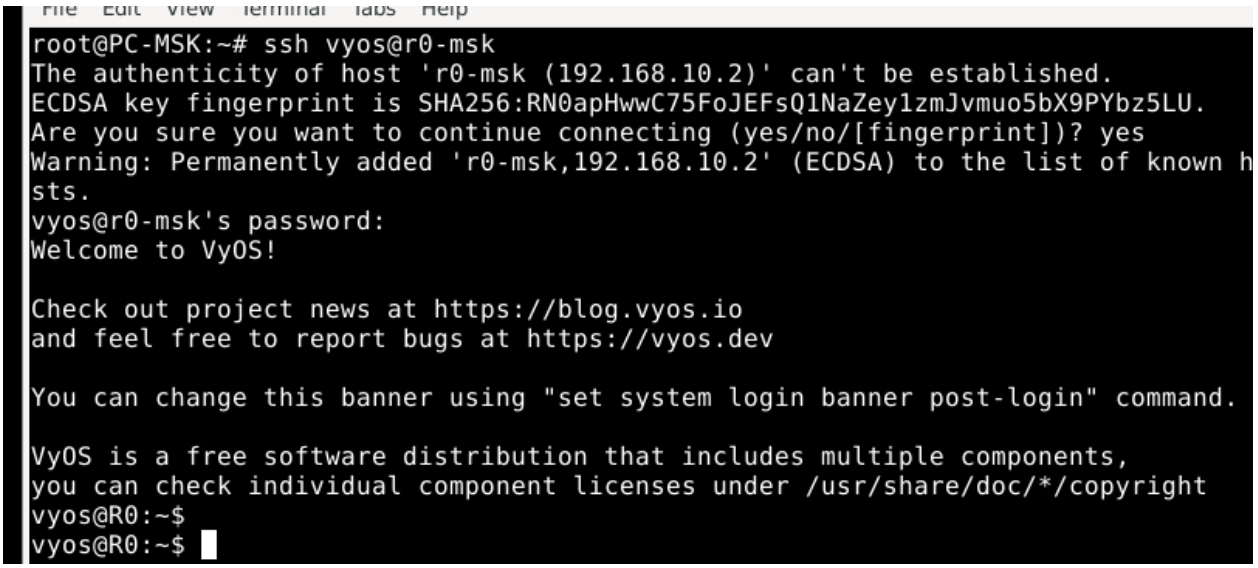
commit

save

Проверка

С PC-MSK подключаемся по SSH

ssh vyos@r0-msk



VDS

apt install ssh

systemctl status sshd

su user

mkdir /home/user/.ssh

На PC-MSK заходим под пользователем user с паролем P@ssw0rd

ssh-keygen

cd /home/user/.ssh/

ls -l

scp id_rsa.pub user@100.70.6.12:/home/user/.ssh/authorized_keys

su root

nano /etc/hosts

```
  GNU nano 5.4                          /etc/hosts *
127.0.0.1       localhost
127.0.1.1       PC-MSK
100.70.6.12     VDS
# The following lines are desirable for IPv6 capal
::1     localhost ip6-localhost ip6-loopback
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

exit

Проверка

ssh user@VDS

```
user@PC-MSK:~/.ssh$ ssh user@VDS
The authenticity of host 'vds (100.70.6.12)' can't be established.
ECDSA key fingerprint is SHA256:T3dB4et1CEbBHPtoifeuQ7JsarkETy9WKq02fOlmgM0.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'vds' (ECDSA) to the list of known hosts.
Linux VDS 5.10.0-20-amd64 #1 SMP Debian 5.10.158-2 (2022-12-13) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Wed Mar 29 13:36:53 2023 from 100.70.4.18
user@VDS:~$
```

Офис AMS

На FW-AMS

WAN – 100.70.3.45/26, шлюз 100.70.3.1, DNS 100.100.100.100

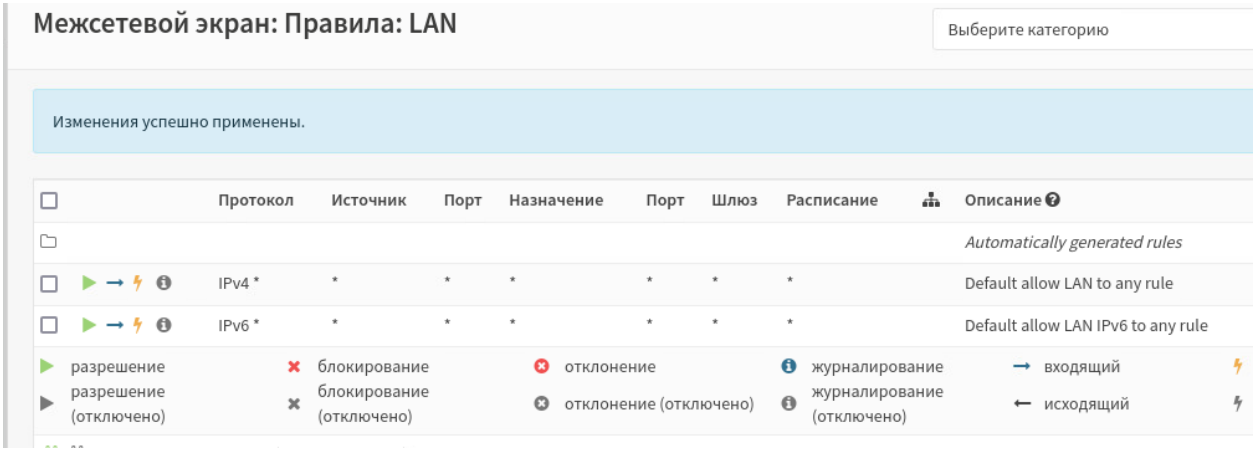
DMZ – 192.168.2.1/24

Обновляем OPNSense (через консоль выбираем опцию 12)

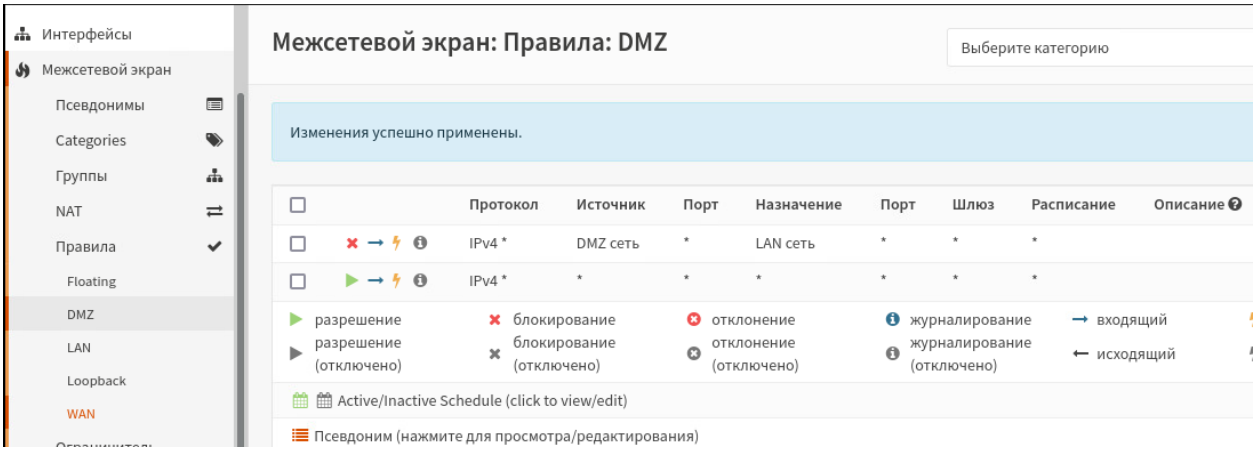
Система – Программное обеспечение – Плагины – os-frr и lldp (устанавливаем)

Настраиваем Межсетевой экран

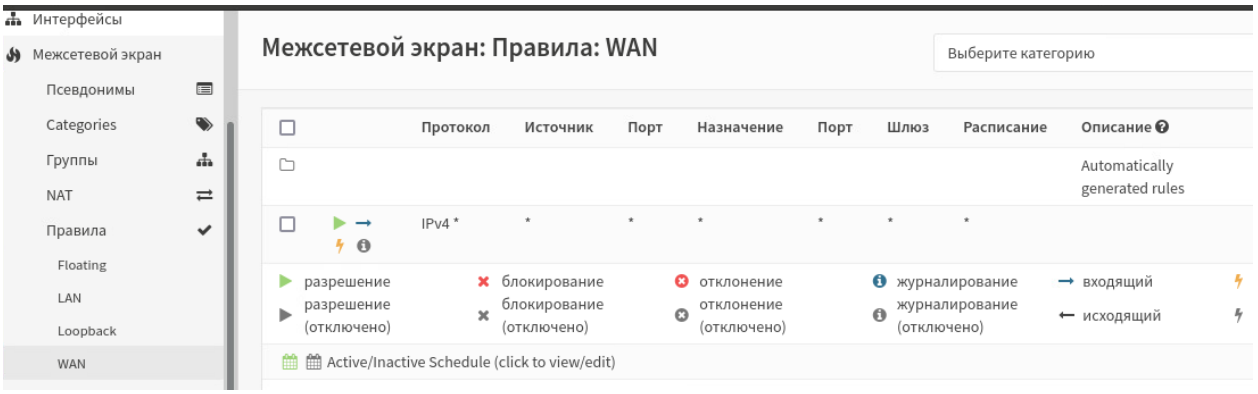
1) на интерфейсе LAN



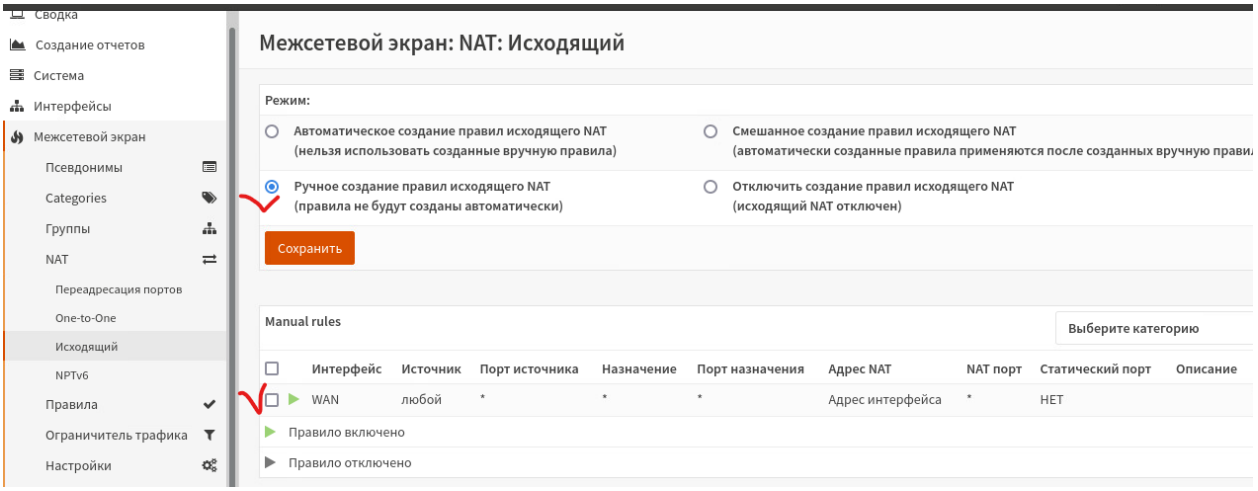
2) на интерфейсе DMZ



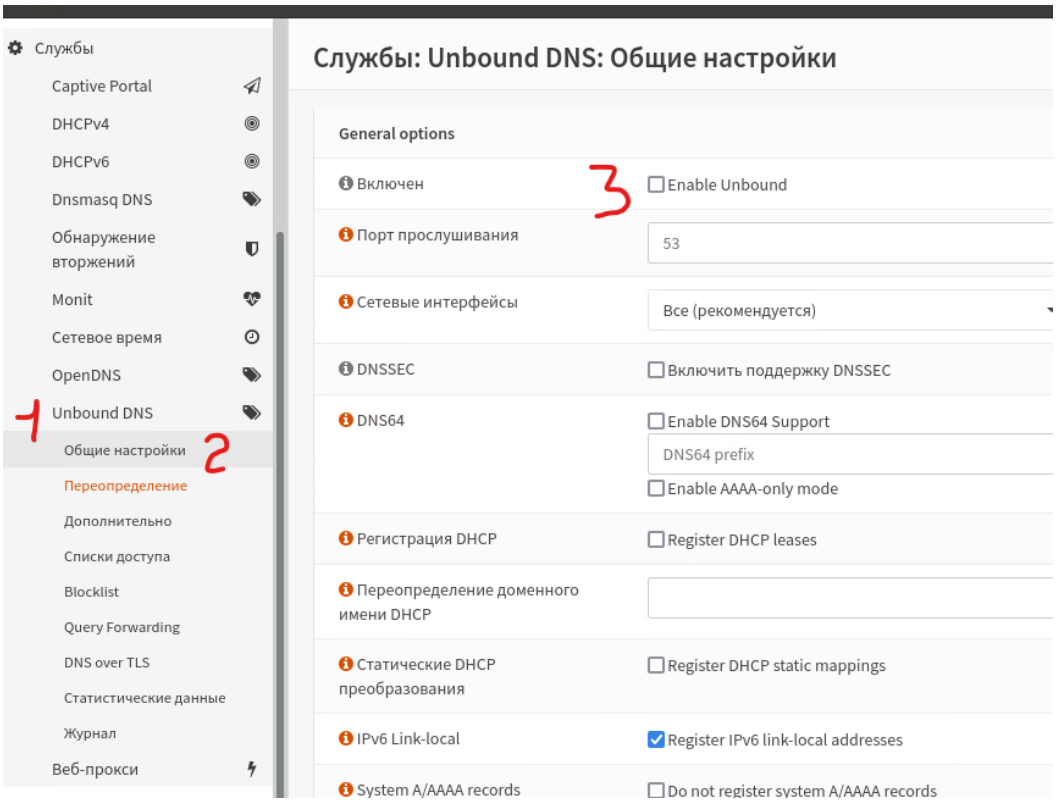
3) на интерфейсе WAN



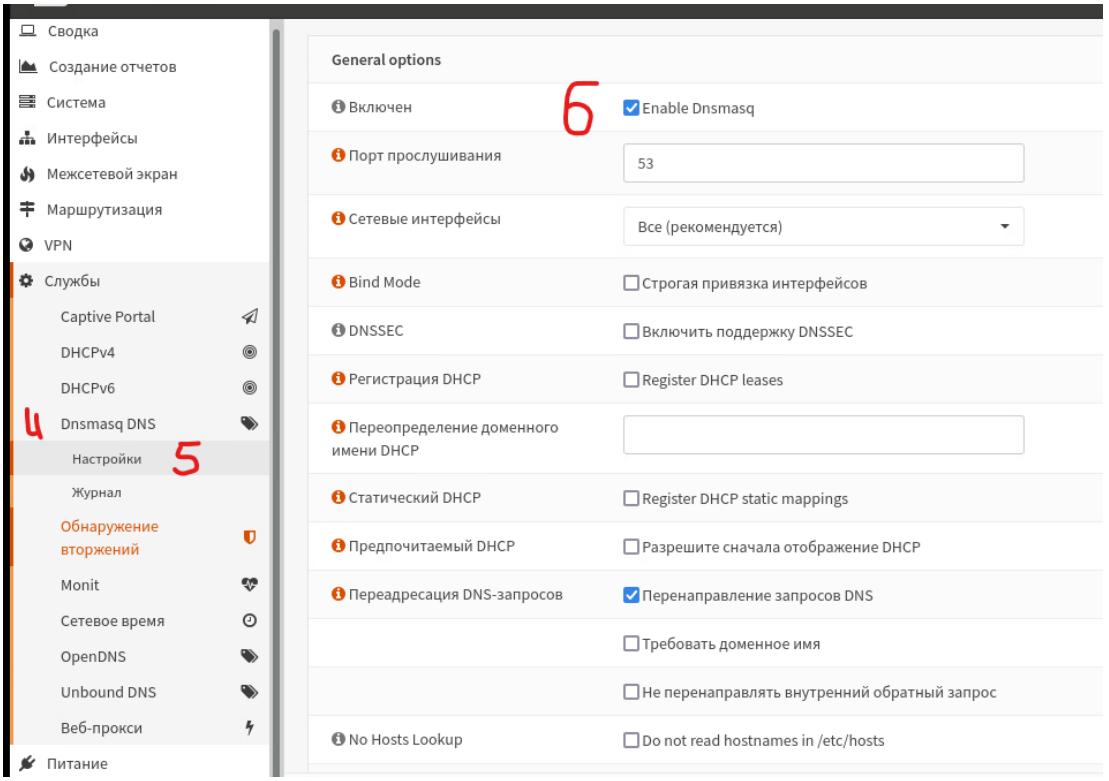
4) Правила NAT



Настраиваем перенаправление DNS запросов



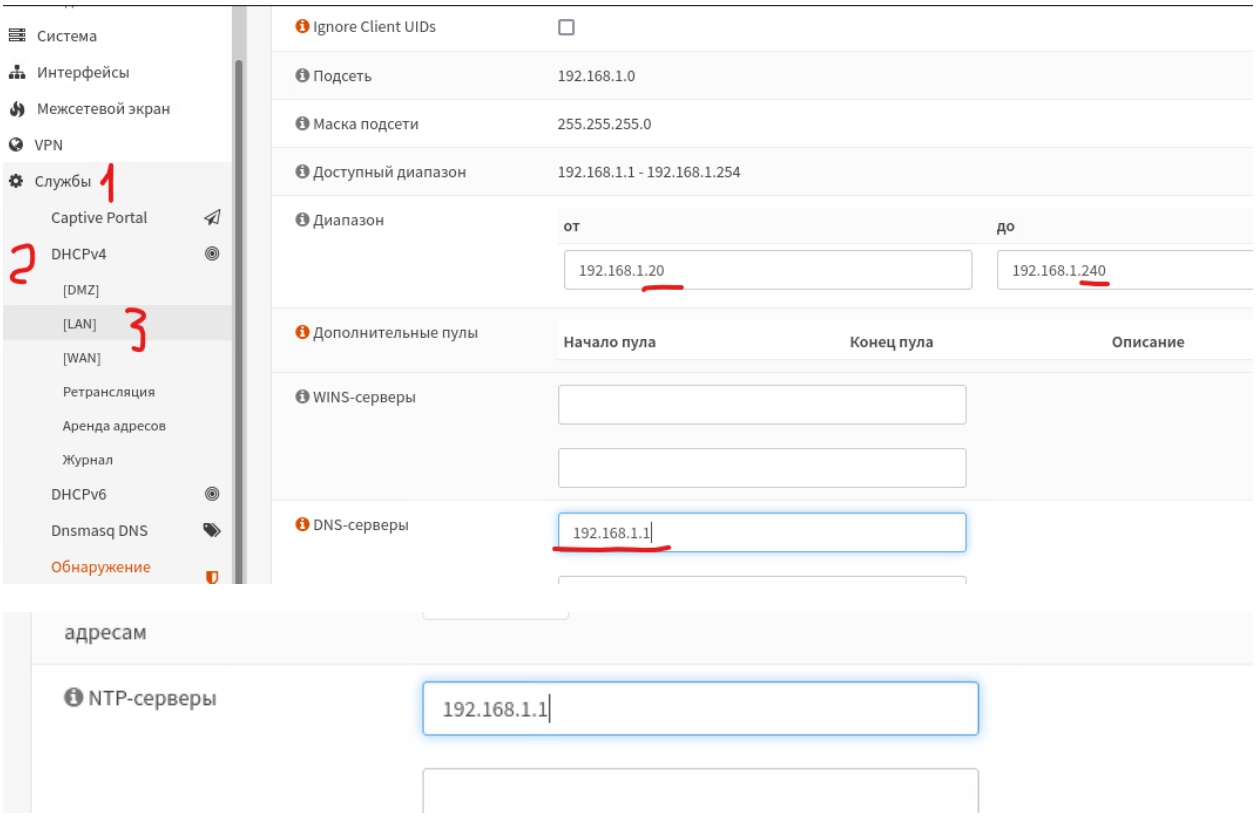
Сохранить настройки



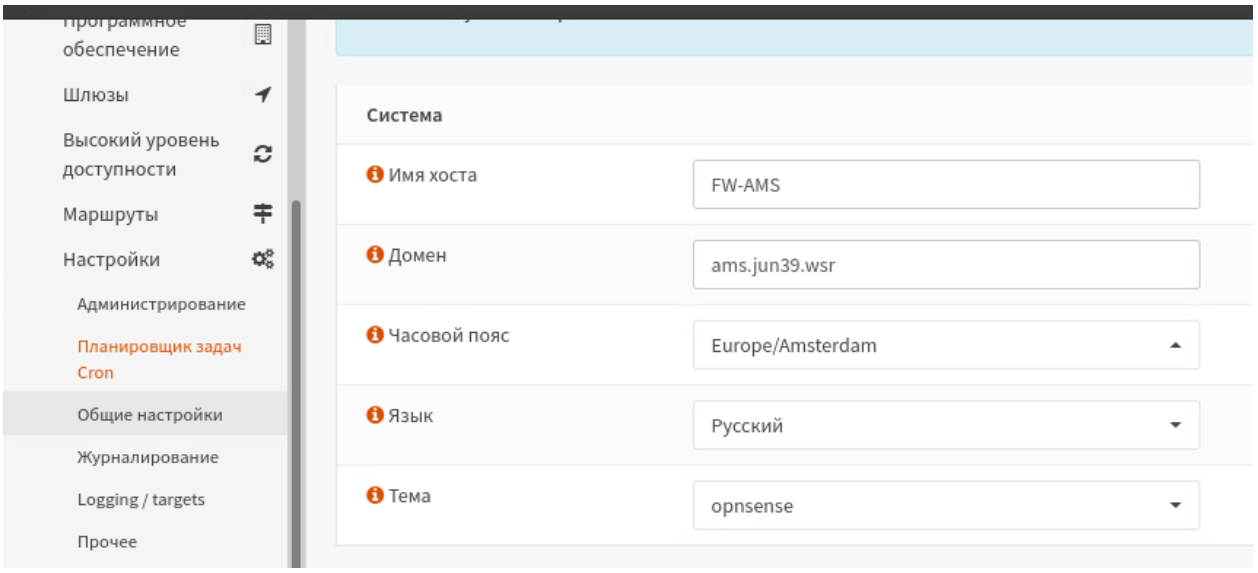
Проверка

На PC-AMS – ping 8.8.8.8 и ping ya.ru

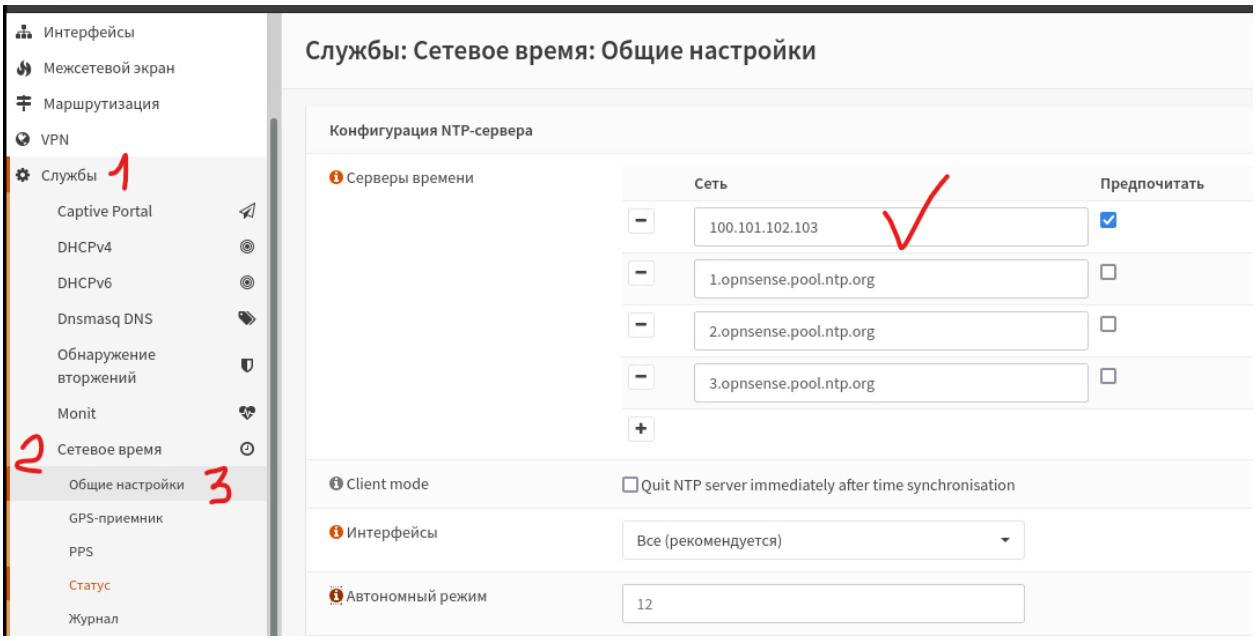
Настройка DHCP на интерфейсе LAN



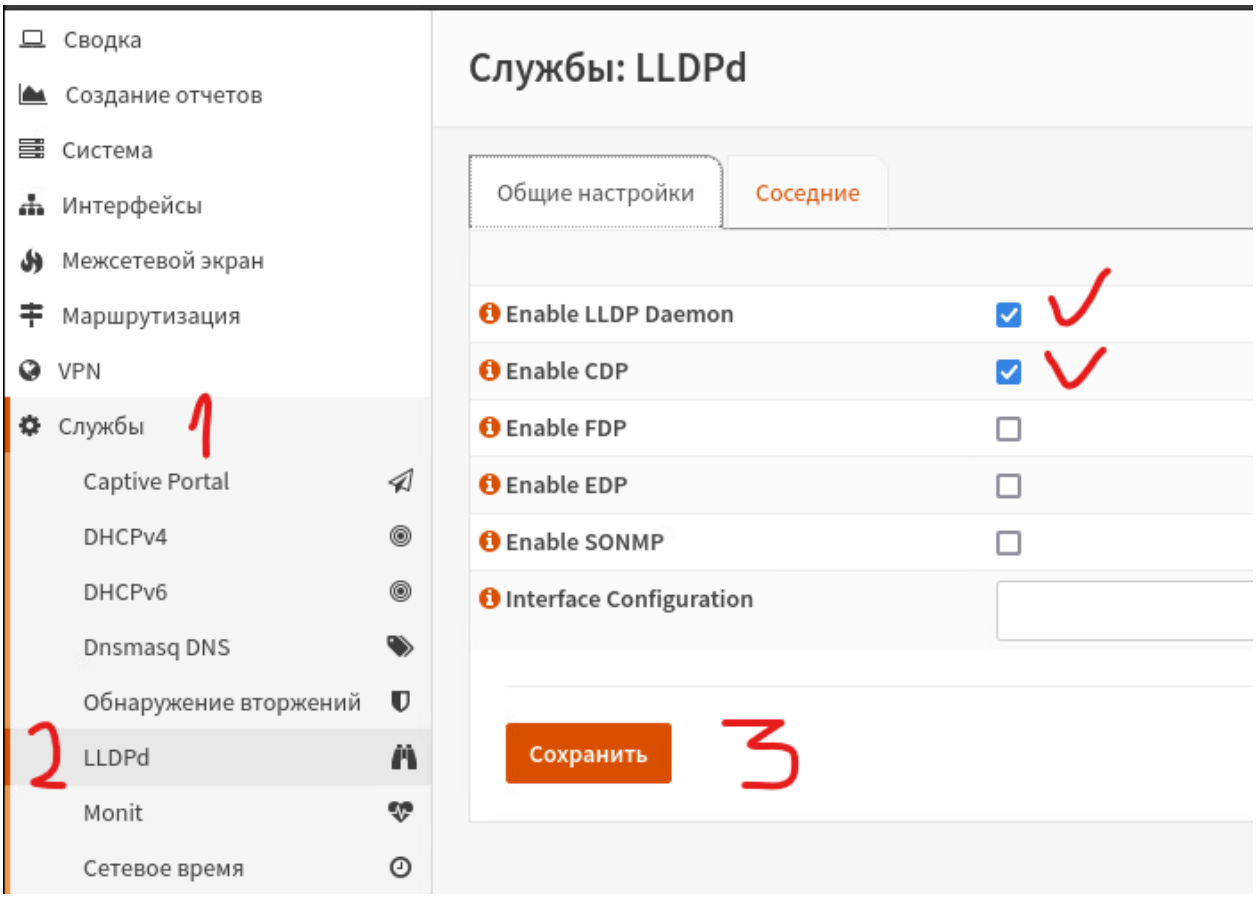
Настройка имени, доменного имени, часового пояса



Настройка синхронизации времени



Настройка LLDP



Настройка доступа по именам

Переопределение хоста

Хост	Домен	IP-адрес
app-ams	ams.jun39.wsr	192.168.2.3
dmz-ams	ams.jun39.wsr	192.168.2.2
fw-ams	ams.jun39.wsr	192.168.1.1

Записи в этом разделе переопределяют отдельные результаты из Используйте их для изменения р

DMZ-AMS

1) Назначаем адрес согласно принятой схеме IP-адресации:

Адрес 192.168.2.2/24

Шлюз 192.168.2.1

DNS 192.168.2.1

Проверка:

ping 8.8.8.8 и ping ya.ru

2) Устанавливаем имя, время и часовой пояс

hostnamectl set-hostname DMZ-AMS.ams.jun39.wsr

timedatectl set-timezone Europe/Amsterdam

apt install chrony

nano /etc/chrony/chrony.conf

```
# Use Debian vendor zone.
pool 192.168.2.1 iburst
```

systemctl restart chrony

systemctl status chrony

Проверка

chronyc tracking

timedatectl

3) Устанавливаем LLDP

apt install lldpd

Проверка

llpdctl

APP-AMS

Назначаем адрес согласно принятой схеме IP-адресации:

Адрес 192.168.2.3/24

Шлюз 192.168.2.1

DNS 192.168.2.1

Проверка:

ping 192.168.2.2 и ping 8.8.8.8 и ping ya.ru

2) Устанавливаем имя, время и часовой пояс

hostnamectl set-hostname APP-AMS.ams.jun39.wsr

timedatectl set-timezone Europe/Amsterdam

apt install chrony

nano /etc/chrony/chrony.conf

```
# Use Debian vendor zone.
pool 192.168.2.1 iburst
```

systemctl restart chrony

systemctl status chrony

Проверка

chronyc tracking

timedatectl

3) Устанавливаем LLDP

apt install lldpd

Проверка

llpdctl

PC-AMS

Устанавливаем имя, время и часовой пояс

hostnamectl set-hostname PC-AMS.ams.jun39.wsr

timedatectl set-timezone Europe/Amsterdam

apt install chrony

Проверка

timedatectl

```
File  Edit  View  Terminal  Tabs  Help
root@PC-AMS:~# timedatectl
               Local time: Wed 2023-03-29 13:05:45 CEST
           Universal time: Wed 2023-03-29 11:05:45 UTC
                 RTC time: Wed 2023-03-29 11:05:45
                Time zone: Europe/Amsterdam (CEST, +0200)
System clock synchronized: yes
              NTP service: active
          RTC in local TZ: no
root@PC-AMS:~#
```

chronyc sources

```
root@PC-AMS:~# chronyc sources
MS Name/IP address         Stratum Poll Reach LastRx Last sample
===============================================================================
^- 195.218.227.166               2   6   177    33  -1119us[-1119us] +/-   71ms
^+ yggnode.cf                    2   6   177    32  -1800us[-1800us] +/-   13ms
^- ns5.vlz.su                    2   6   177    33  +2407us[+2407us] +/-   67ms
^* stratum2-1.ntp.mow01.ru.>     2   6   177    33  -5074us[-6776us] +/-   14ms
^+ FW-AMS                        3   6   177    32    +12ms[  +12ms] +/-   30ms
root@PC-AMS:~#
```

Офис IKT

На FW-IKT

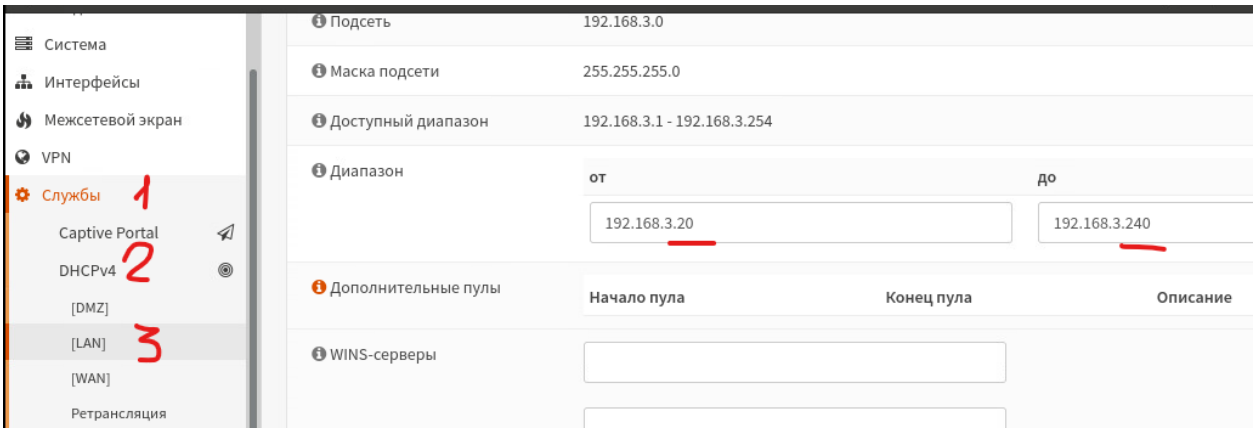
WAN – 100.70.7.99/25, шлюз 100.70.7.1, DNS 100.100.100.100

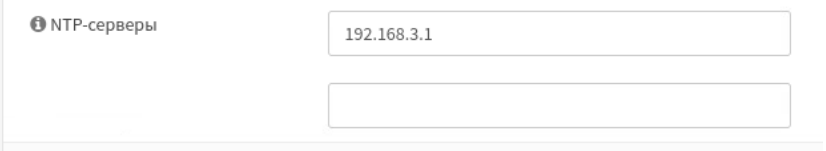
DMZ – 192.168.4.1/24

Обновляем OPNSense (через консоль выбираем опцию 12)

Система – Программное обеспечение – Плагины – os-frr и lldp (устанавливаем)

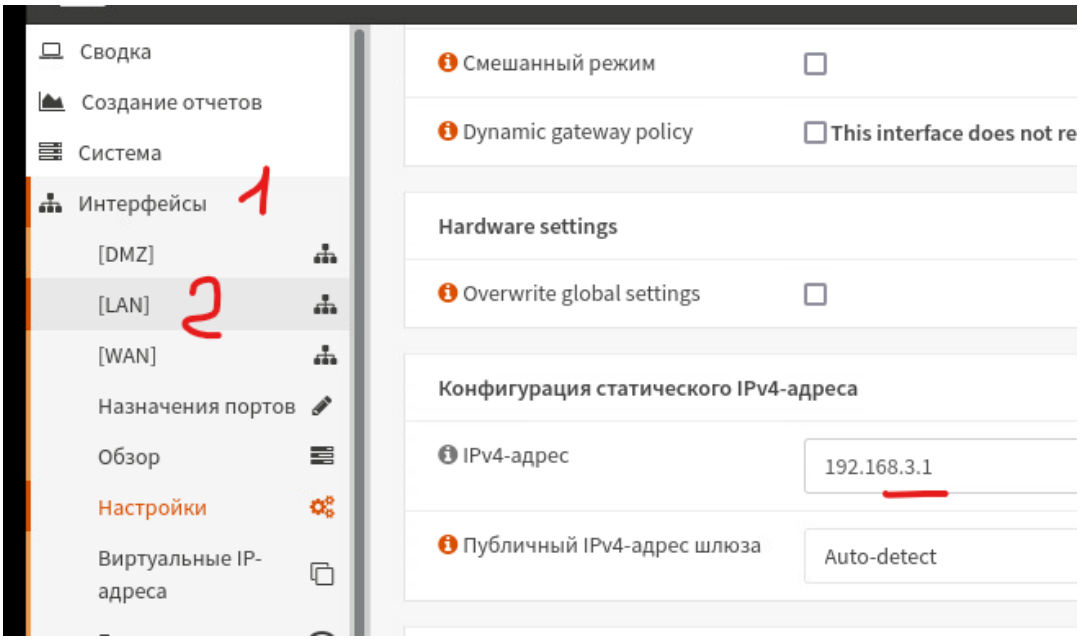
Меняем настройки DHCP сервера





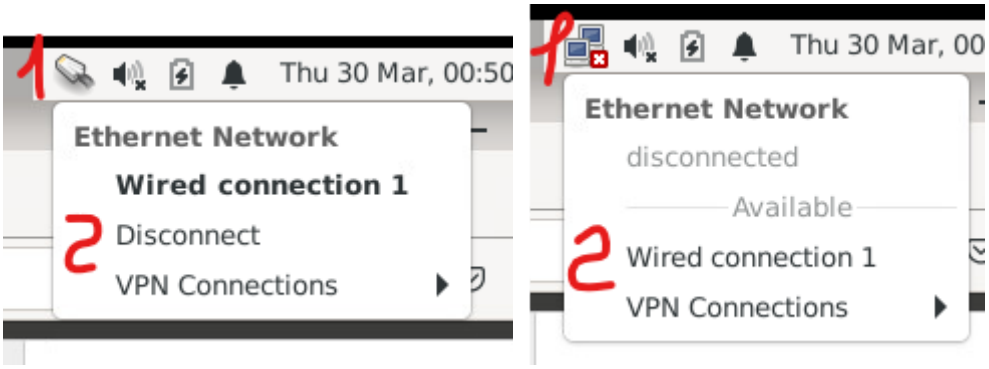
Сохраняем, но настройки НЕ ПРИМЕНЯЕМ

Меняем адрес на LAN

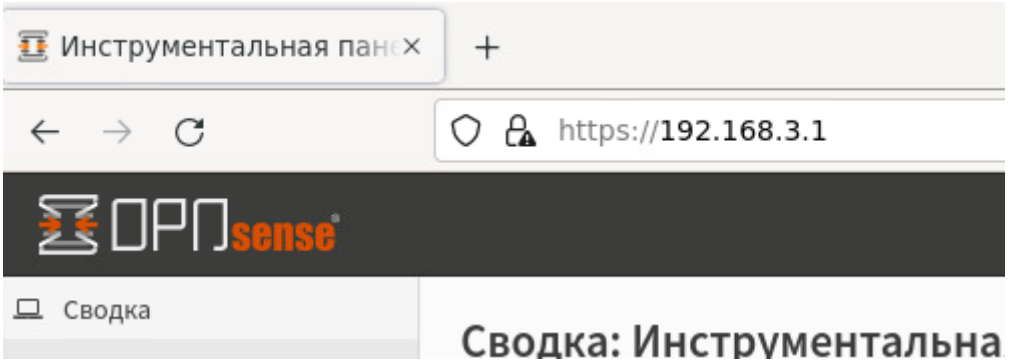


Сохраняем, применяем настройки. ТЕРЯЕТСЯ ДОСТУП!

На PC-IKT перезапускаем сетевой интерфейс

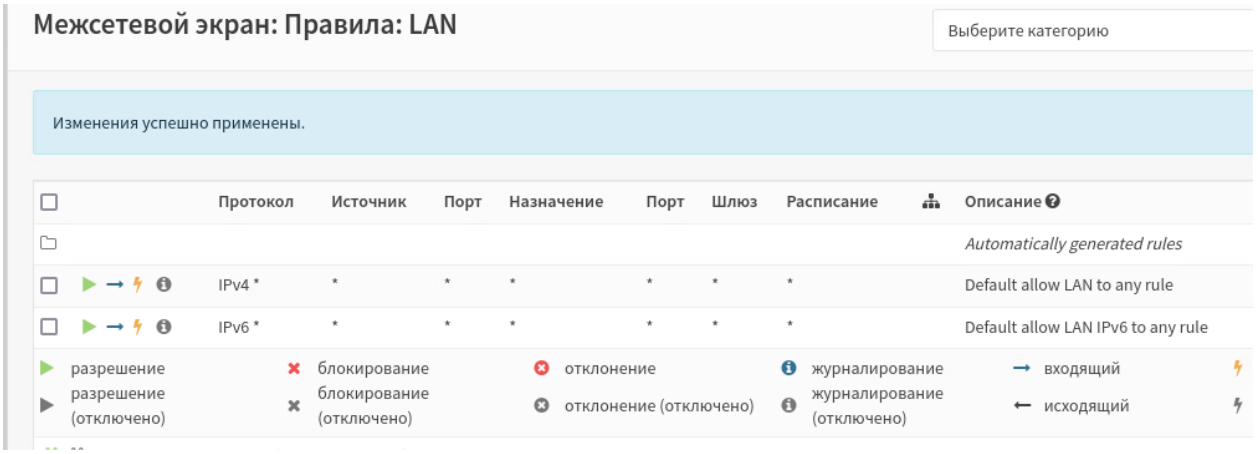


ПОЯВЛЯЕТСЯ ДОСТУП по новому адресу

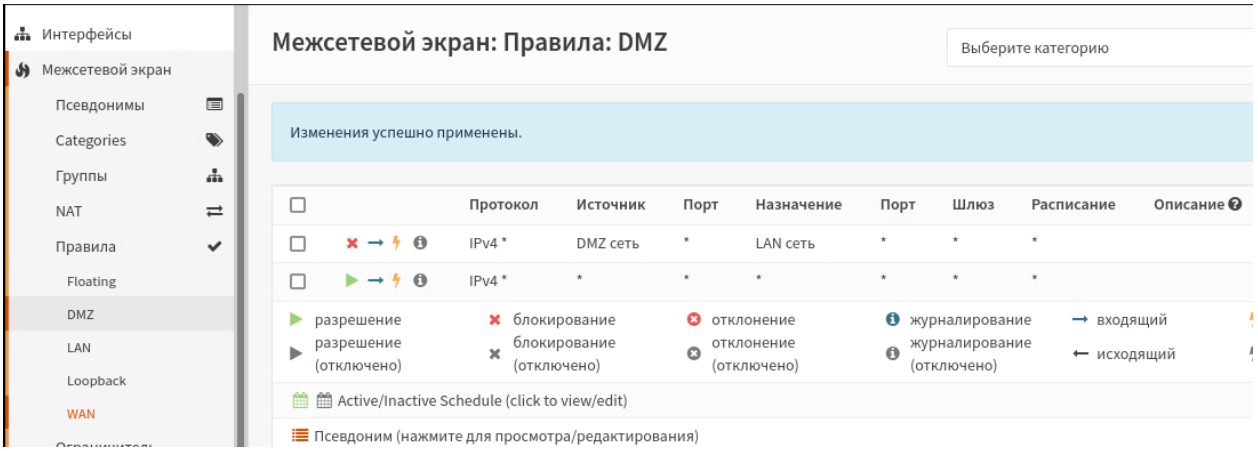


Настраиваем Межсетевой экран

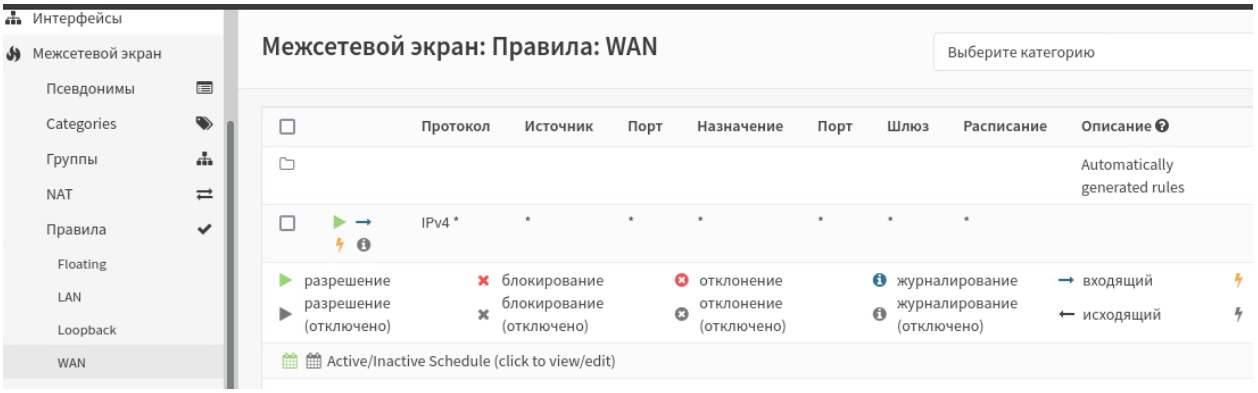
1) на интерфейсе LAN



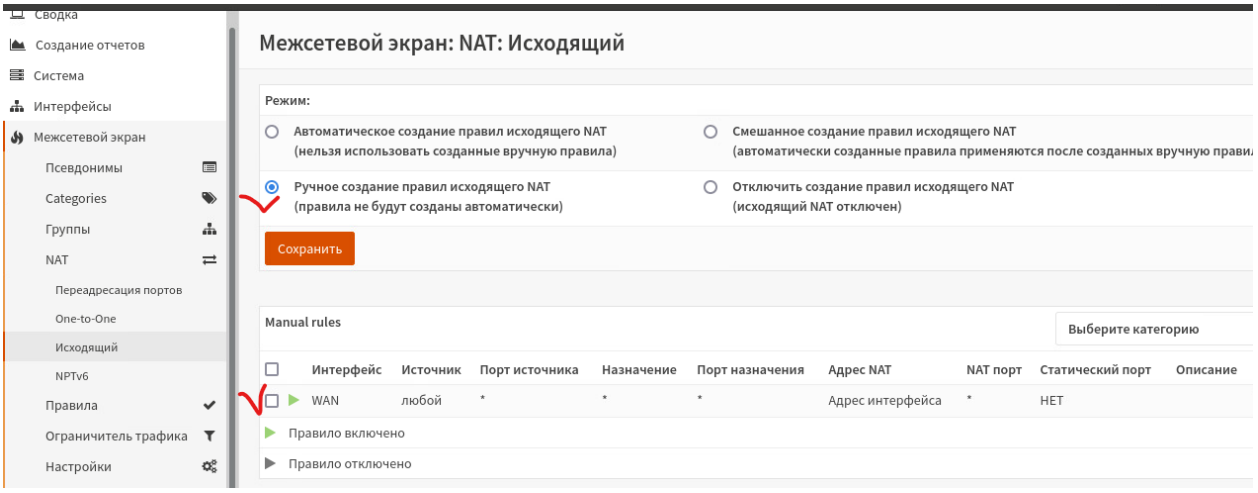
2) на интерфейсе DMZ



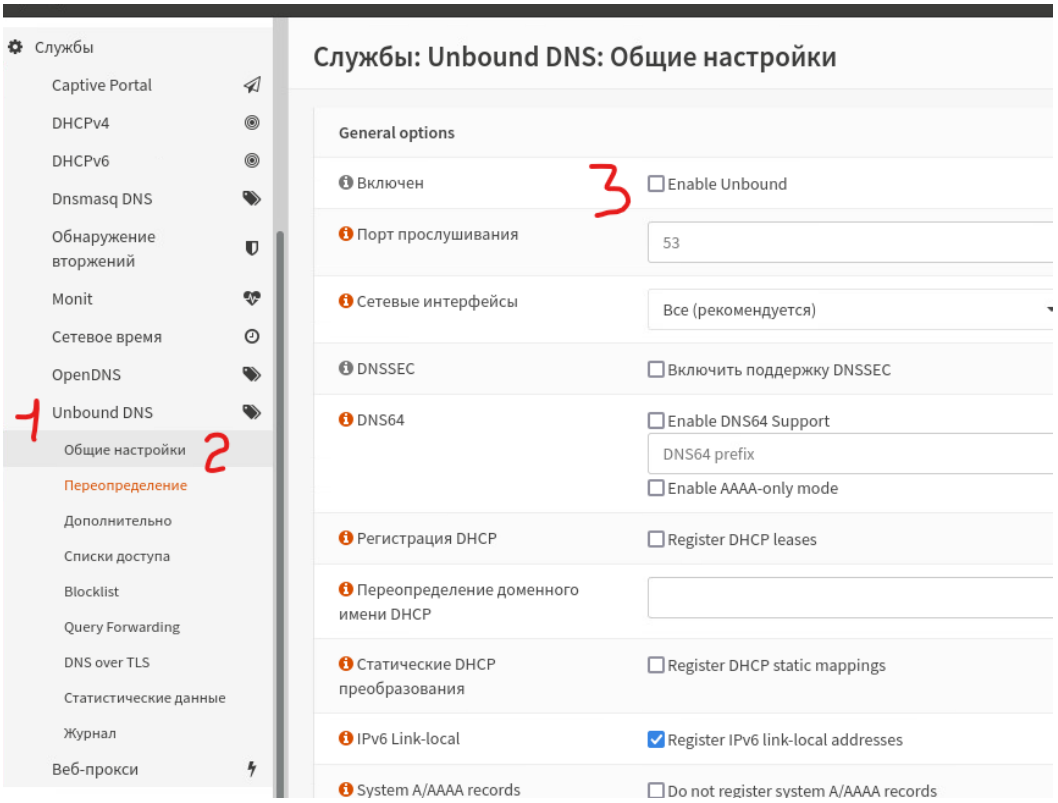
3) на интерфейсе WAN



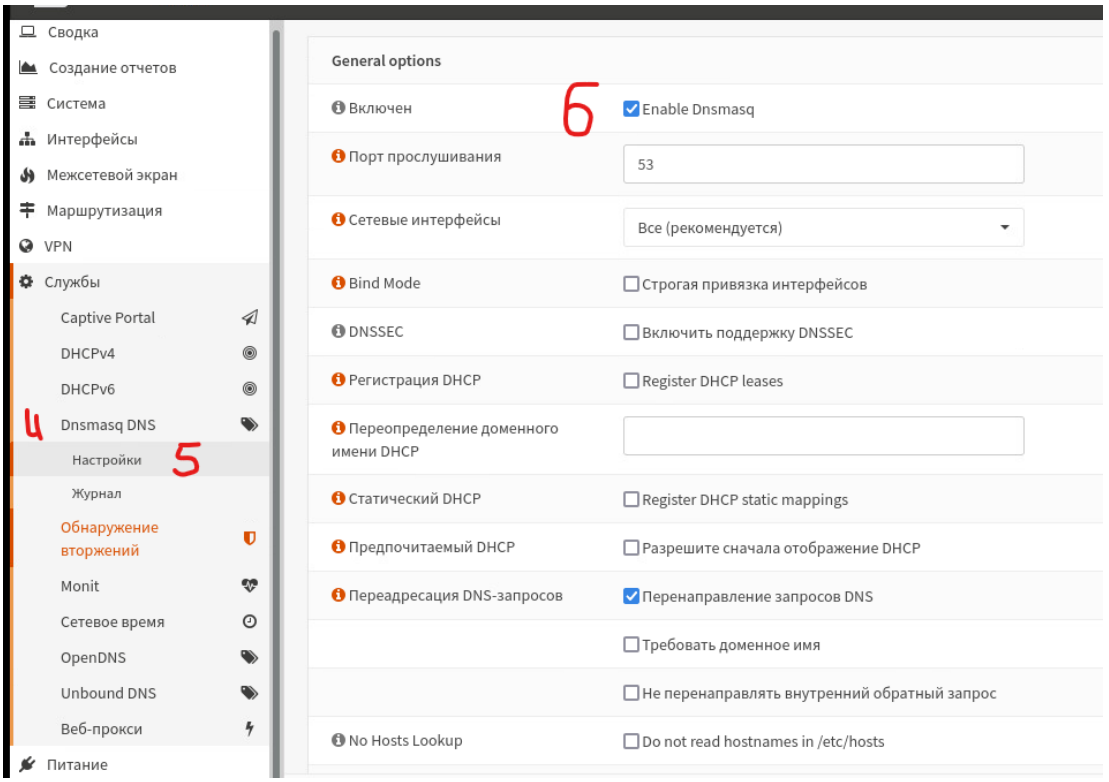
4) Правила NAT



Настраиваем перенаправление DNS запросов



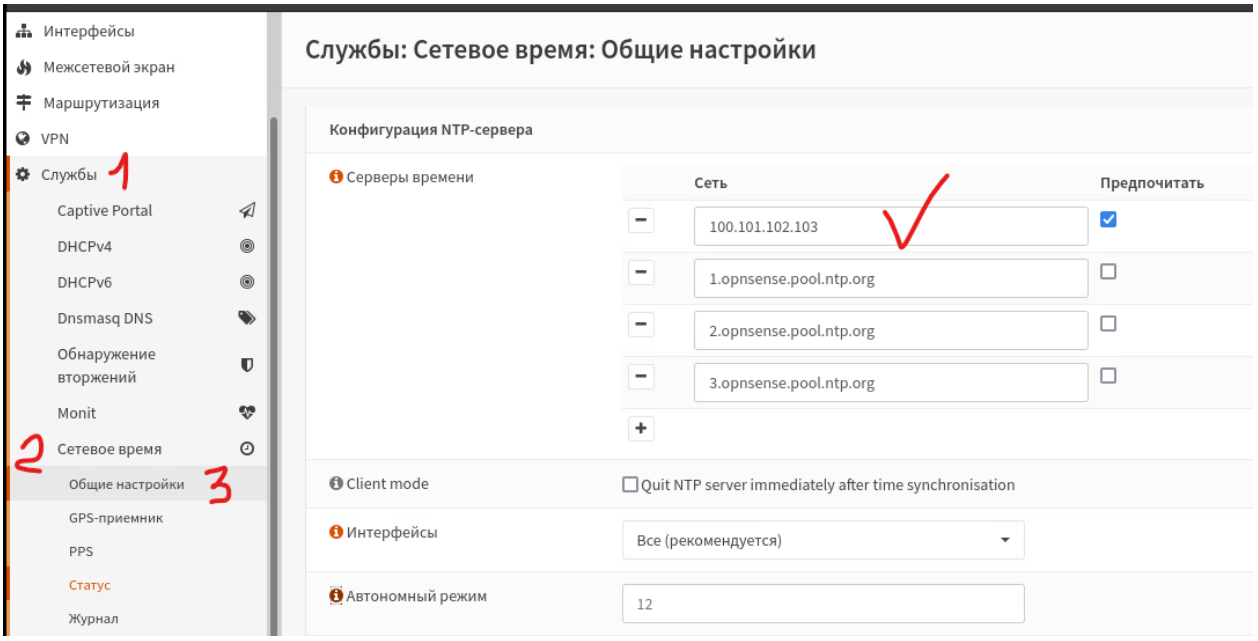
Сохранить настройки



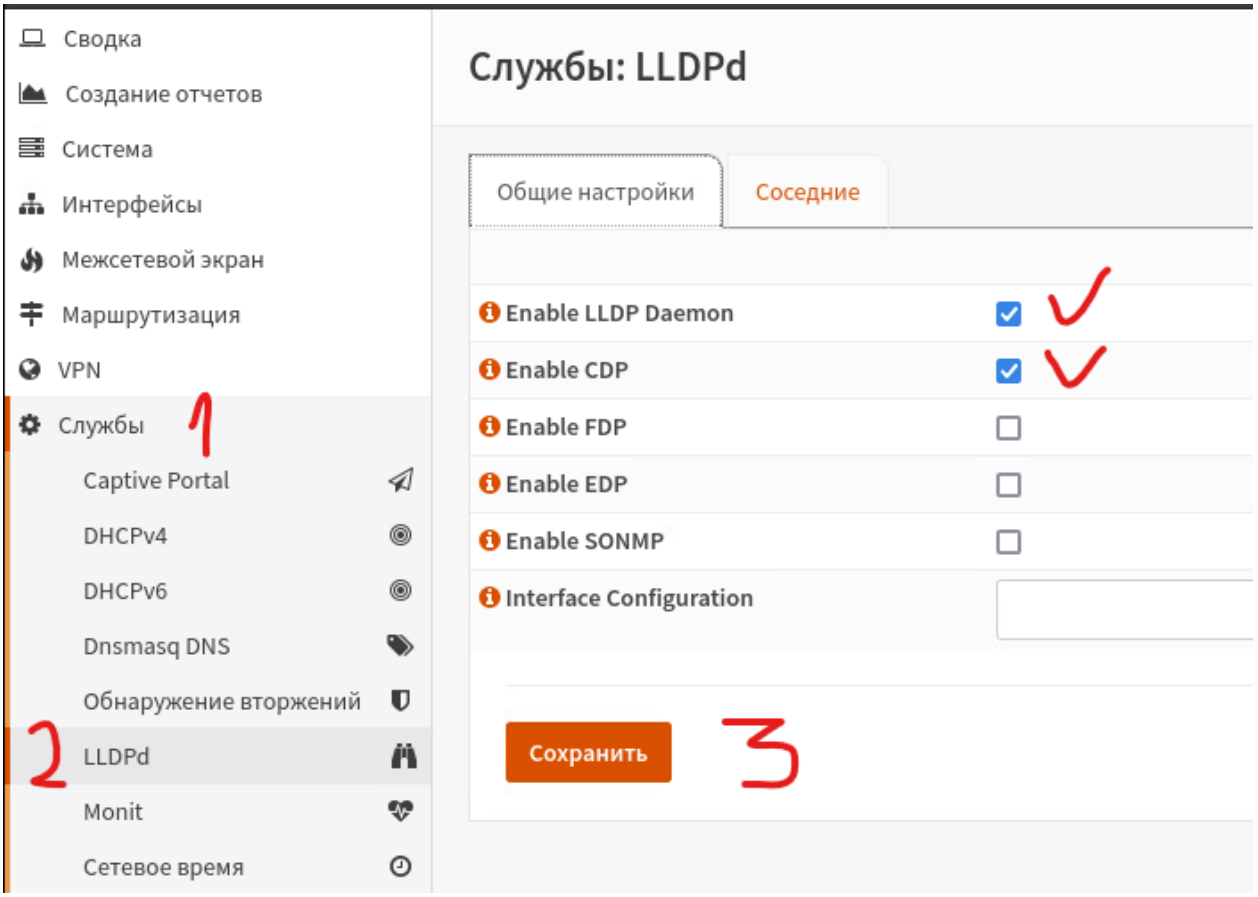
Проверка

На PC-IKT – ping 8.8.8.8 и ping ya.ru

Настройка синхронизации времени



Настройка LLDP



Настройка доступа по именам

Переопределение хоста

Хост	Домен	IP-адрес
app-ikt	ikt.jun39.wsr	192.168.4.3
fw-ikt	ikt.jun39.wsr	192.168.3.1
srv1-ikt	ikt.jun39.wsr	192.168.3.2
www	jun39.wsr	192.168.4.3

Общие настройки

Система	
Имя хоста	FW-IKT
Домен	ikt.jun39.wsr
Часовой пояс	Asia/Irkutsk
Язык	Русский
Тема	opnsense

PC-IKT

Устанавливаем имя, время и часовой пояс

hostnamectl set-hostname PC-IKT.ikt.jun39.wsr

timedatectl set-timezone Asia/Irkutsk

apt install chrony

Проверка

timedatectl

```
root@PC-IKT:~# timedatectl
               Local time: Thu 2023-03-30 13:41:52 +08
           Universal time: Thu 2023-03-30 05:41:52 UTC
                 RTC time: Thu 2023-03-30 05:41:52
                Time zone: Asia/Irkutsk (+08, +0800)
System clock synchronized: yes
              NTP service: active
          RTC in local TZ: no
root@PC-IKT:~#
```

chronyc sources

```
root@PC-IKT:~# chronyc sources
MS Name/IP address         Stratum Poll Reach L
===============================================
^- 213.234.203.30               2   6    17
^- ns1.ooonet.ru                2   6    17
^- nsa.lds.net.ua               2   6    17
^+ roswell.systems              2   6    17
^* FW-IKT                       3   6    17
root@PC-IKT:~#
```

SRV1-IKT

1) Назначаем адрес согласно принятой схеме IP-адресации:

Адрес 192.168.3.2/24

Шлюз 192.168.3.1

DNS 192.168.3.1

Проверка:

ping 8.8.8.8 и ping ya.ru

2) Устанавливаем имя, время и часовой пояс

hostnamectl set-hostname SRV1-IKT.ikt.jun39.wsr

timedatectl set-timezone Asia/Irkutsk

apt install chrony

nano /etc/chrony/chrony.conf

```
# Use Debian vendor zone.
pool 192.168.3.1 iburst
```

systemctl restart chrony

systemctl status chrony

Проверка

chronyc tracking

timedatectl

3) Устанавливаем LLDP

apt install lldpd

Проверка

llpdctl

APP-IKT

Назначаем адрес согласно принятой схеме IP-адресации:

Адрес 192.168.4.3/24

Шлюз 192.168.4.1

DNS 192.168.4.1

Проверка:

ping 8.8.8.8 и ping ya.ru

2) Устанавливаем имя, время и часовой пояс

hostnamectl set-hostname APP-IKT.ikt.jun39.wsr

timedatectl set-timezone Asia/Irkutsk

apt install chrony

nano /etc/chrony/chrony.conf

```
# Use Debian vendor zone.
pool 192.168.4.1 iburst
```

systemctl restart chrony

systemctl status chrony

Проверка

chronyc tracking

timedatectl

3) Устанавливаем LLDP

apt install lldpd

Проверка

llpdctl

ClientVV

Назначаем адрес согласно схеме IP-адресации:

Адрес 100.70.8.78/28

Шлюз 100.70.8.65

DNS 100.100.100.100

Проверка:

ping 100.101.102.103

ping 8.8.8.8

ping ya.ru

Создание пользователя

SRV1-ITK

apt install sudo

adduser admin

```
root@SRV1-IKT:~# adduser admin
Adding user `admin' ...
Adding new group `admin' (1001) ...
Adding new user `admin' (1001) with group `admin' ...
Creating home directory `/home/admin' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for admin
Enter the new value, or press ENTER for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] y
root@SRV1-IKT:~#
```

usermod -aG sudo admin

Проверка

groups admin

```
root@SRV1-IKT:~# groups admin
admin : admin sudo
root@SRV1-IKT:~# _
```

Настройка NFS сервера

SRV1-IKT

apt install nfs-kernel-server

mkdir -p /opt/nfs/rw
mkdir -p /opt/nfs/ro
chmod a+w /opt/nfs/rw
chmod a+w /opt/nfs/ro
touch /opt/nfs/rw/testRW.txt
touch /opt/nfs/ro/testRO.txt

chown -R admin:admin /opt/nfs

nano /etc/exports

/opt/nfs/rw 192.168.3.0/24(rw,sync)
/opt/nfs/ro 192.168.3.0/24(ro,sync)

systemctl restart nfs-server

Проверка
showmount -e 192.168.3.2

```
root@SRV1-IKT:~# showmount -e 192.168.3.2
Export list for 192.168.3.2:
/opt/nfs/ro 192.168.3.0/24
/opt/nfs/rw 192.168.3.0/24
root@SRV1-IKT:~#
```

Настройка NFS клиента

PC-IKT

apt install nfs-common

mkdir -p /home/user/Desktop/nfs_rw

mkdir -p /home/user/Desktop/nfs_ro

nano /etc/fstab

192.168.3.2:/opt/nfs/rw/ /home/user/Desktop/nfs_rw nfs defaults 0 0

192.168.3.2:/opt/nfs/ro/ /home/user/Desktop/nfs_ro nfs defaults 0 0

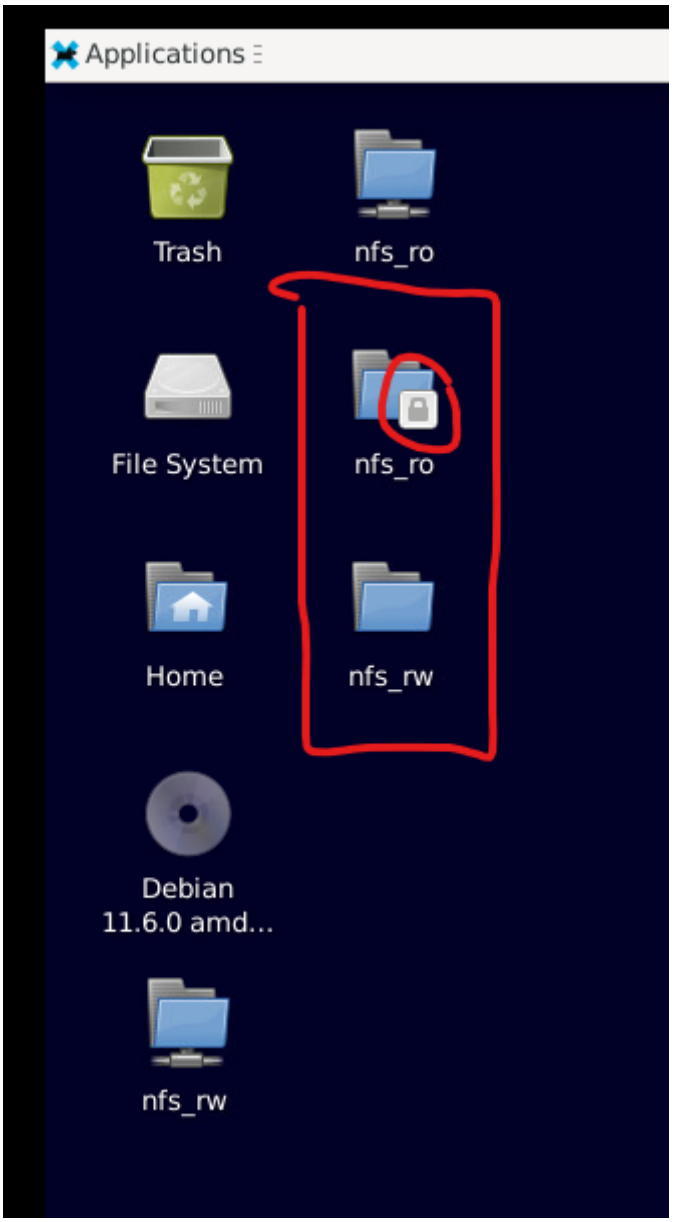
```
# <file system> <mount point>   <type>  <options>       <dump>  <pass>
# / was on /dev/sda1 during installation
UUID=db92be75-00a5-4abf-b8da-9a07fbed1315 /               ext4    errors=remoun
# swap was on /dev/sda5 during installation
UUID=e81357f3-7f3e-4b99-83a7-5716945a740b none            swap    sw
/dev/sr0        /media/cdrom0   udf,iso9660 user,noauto     0       0
192.168.3.2:/opt/nfs/rw/    /home/user/Desktop/nfs_rw    nfs    defaults    0 0
192.168.3.2:/opt/nfs/ro/    /home/user/Desktop/nfs_ro    nfs    defaults    0 0
```

mount -a

df -h

```
root@PC-IKT:~# df -h
Filesystem                Size  Used Avail Use% Mounted on
udev                      465M     0  465M   0% /dev
tmpfs                      98M  1.1M   97M   2% /run
/dev/sda1                  15G  3.4G   11G  25% /
tmpfs                     489M     0  489M   0% /dev/shm
tmpfs                     5.0M     0  5.0M   0% /run/lock
tmpfs                      98M   44K   98M   1% /run/user/0
192.168.3.2:/opt/nfs/rw   15G  1.2G   13G   9% /home/user/Desktop/nfs_rw
192.168.3.2:/opt/nfs/ro   15G  1.2G   13G   9% /home/user/Desktop/nfs_ro
root@PC-IKT:~#
```

Заходим на PC-IKT под пользователем user с паролем P@ssw0rd


Applications
Trash
nfs_ro
File System
nfs_ro
Home
nfs_rw
Debian
11.6.0 amd...
nfs_rw

WEB сервер на APP-*

APP-AMS

apt install nginx

touch /var/www/html/index.html

nano /var/www/html/index.html

Welcome to Minecraft server mc.jun39.wsr site in European region

systemctl restart nginx

На FW-AMS

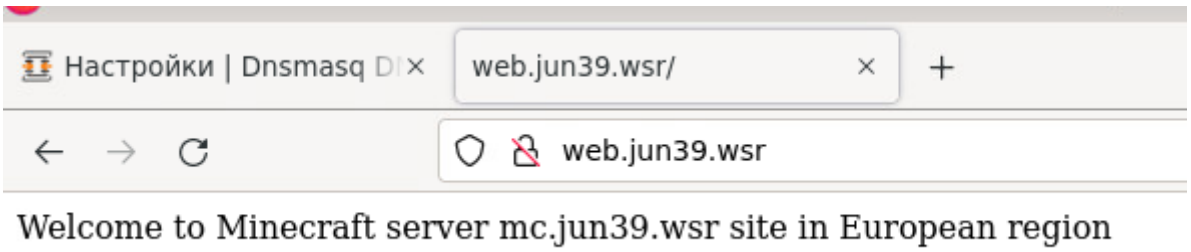
Переопределение хоста

Хост	Домен	IP-адрес
app-ams	ams.jun39.wsr	192.168.2.3
dmz-ams	ams.jun39.wsr	192.168.2.2
fw-ams	ams.jun39.wsr	192.168.1.1
web	jun39.wsr	192.168.2.3

На PC-AMS

Проверка

В браузере вводим http://web.jun39.wsr



APP-MSK

apt install nginx

touch /var/www/html/index.html

nano /var/www/html/index.html

Welcome to Minecraft server mc.jun39.wsr site in Central region

systemctl restart nginx

На FW-MSK

Переопределение хоста

Хост	Домен	IP-адрес
app-msk	msk.jun39.wsr	192.168.20.2
fw-msk	msk.jun39.wsr	192.168.10.1
r0-msk	msk.jun39.wsr	192.168.10.2
srv1-msk	msk.jun39.wsr	192.168.12.2
srv2-msk	msk.jun39.wsr	192.168.12.3
web	jun39.wsr	192.168.20.2

На PC-MSK

Проверка

В браузере вводим http://web.jun39.wsr

APP-IKT

apt install nginx

touch /var/www/html/index.html

nano /var/www/html/index.html

Welcome to Minecraft server mc.jun39.wsr site in Siberian region

systemctl restart nginx

На FW-IKT

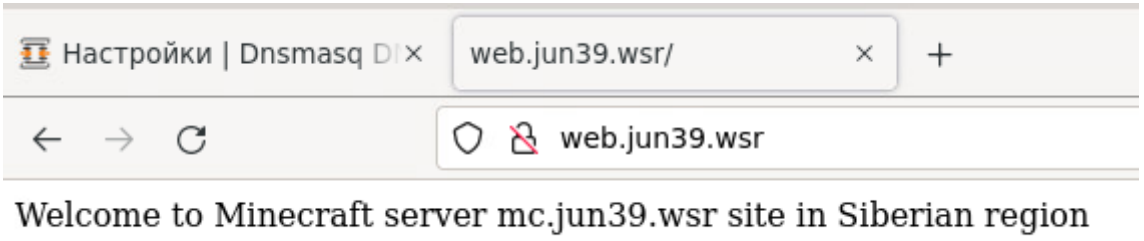
Переопределение хоста

Хост	Домен	IP-адрес
app-ikt	ikt.jun39.wsr	192.168.4.3
fw-ikt	ikt.jun39.wsr	192.168.3.1
srv1-ikt	ikt.jun39.wsr	192.168.3.2
web	jun39.wsr	192.168.4.3

На PC-IKT

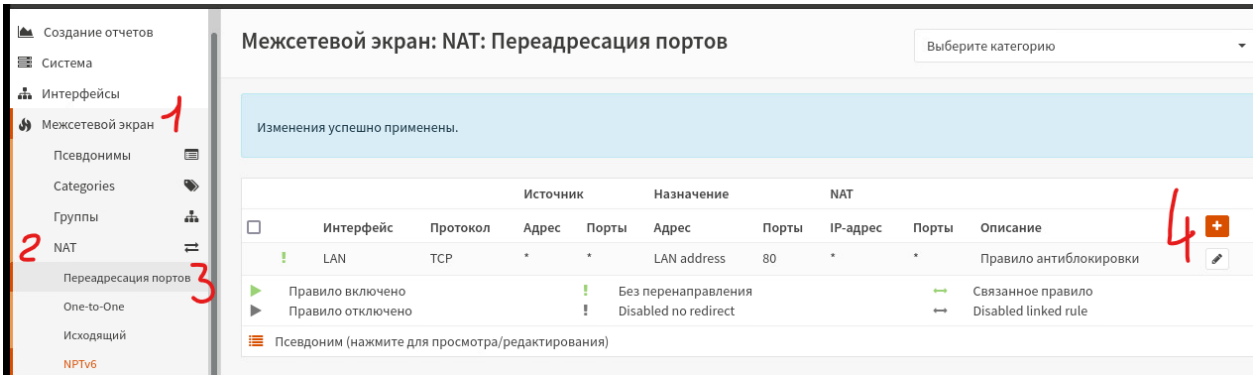
Проверка

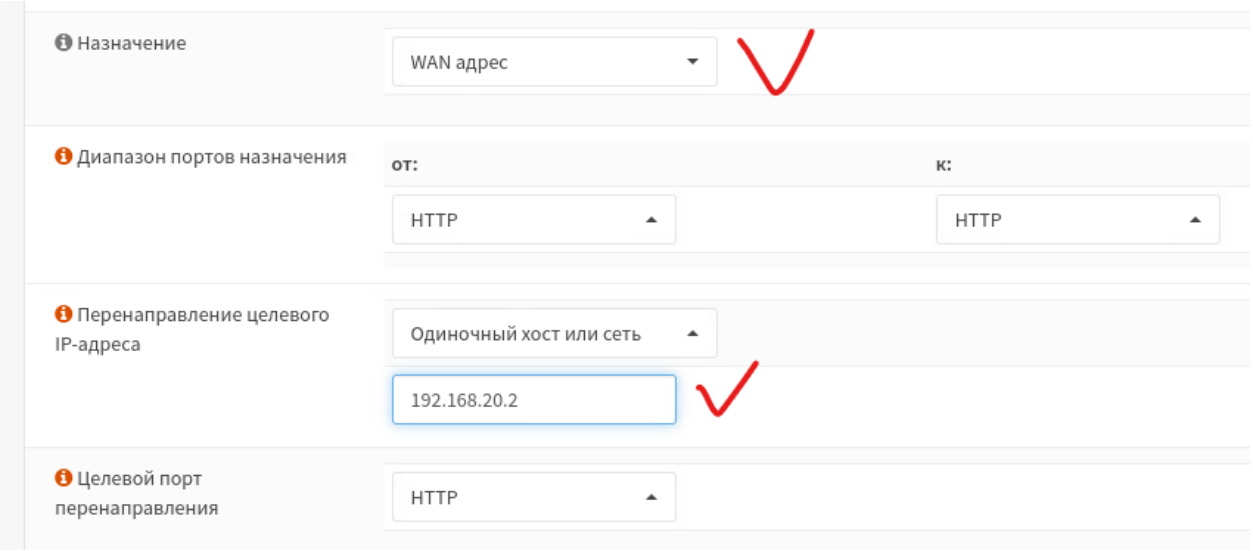
В браузере вводим http://web.jun39.wsr

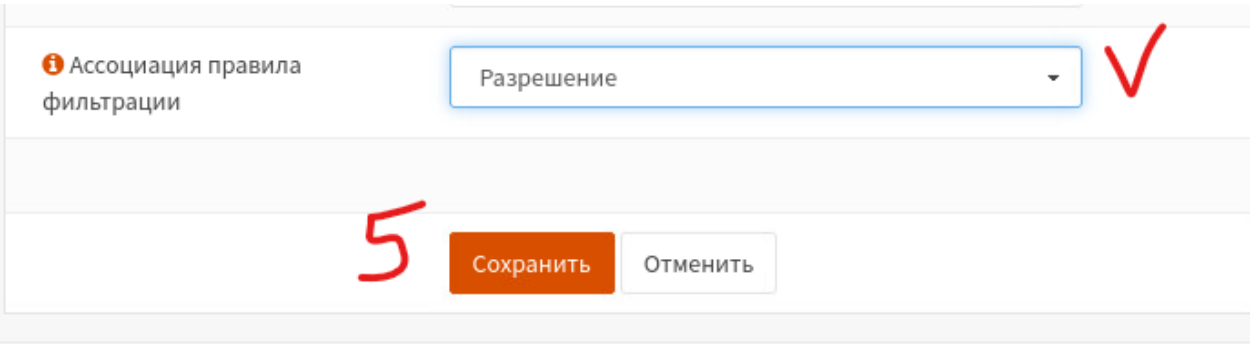


Проброс порта для сайта на APP-*

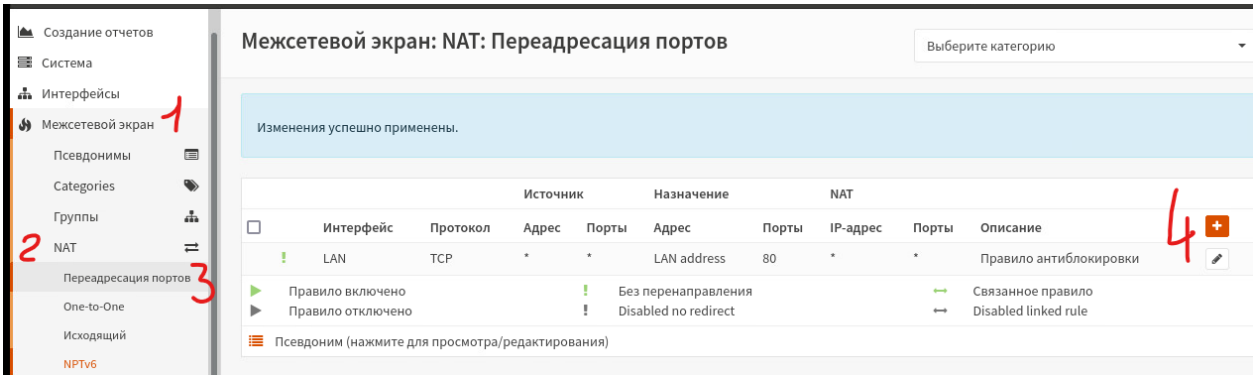
FW-MSK (подключаемся через PC-MSK)

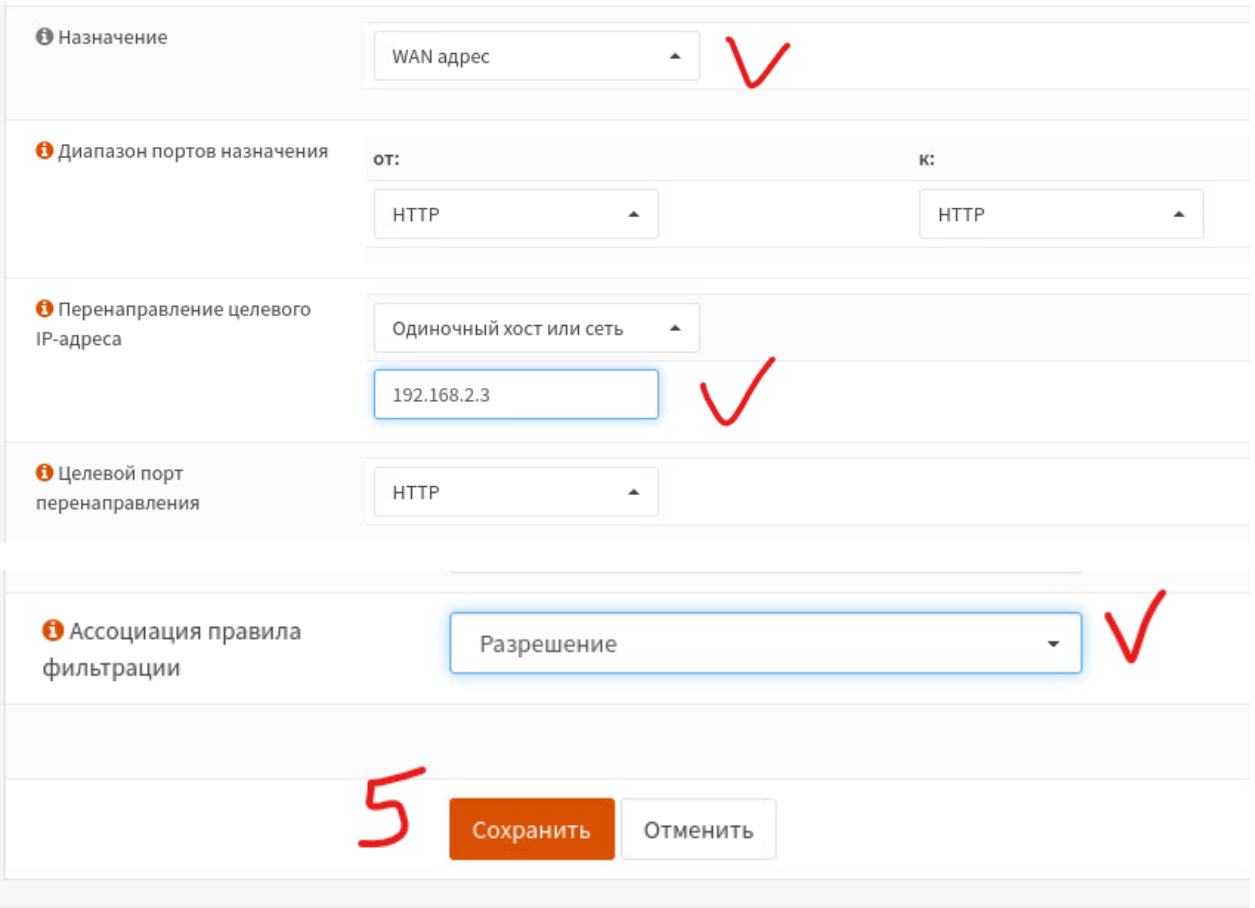




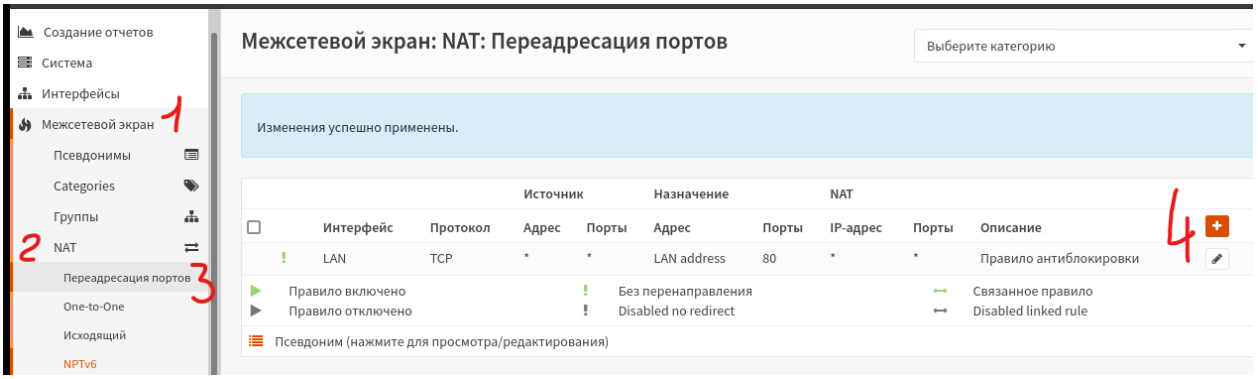


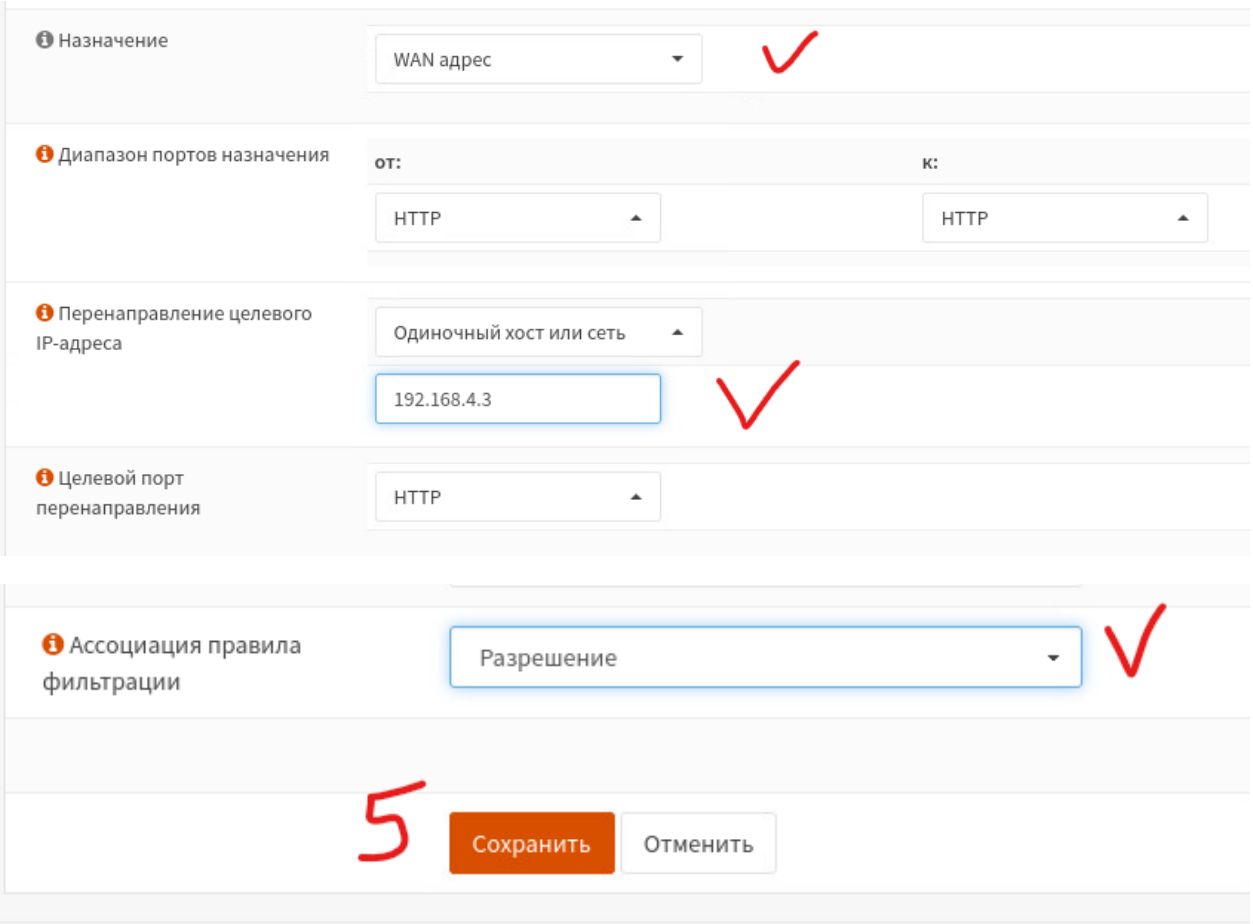
FW-AMS (подключаемся через PC-AMS)





FW-IKT (подключаемся через PC-IKT)





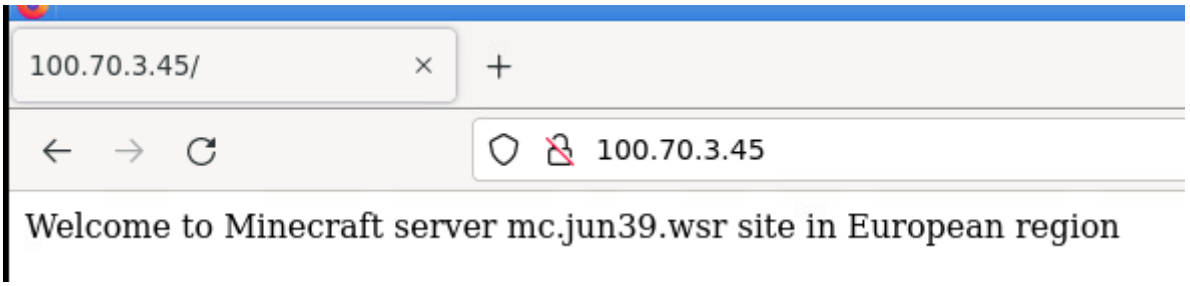
Проверка

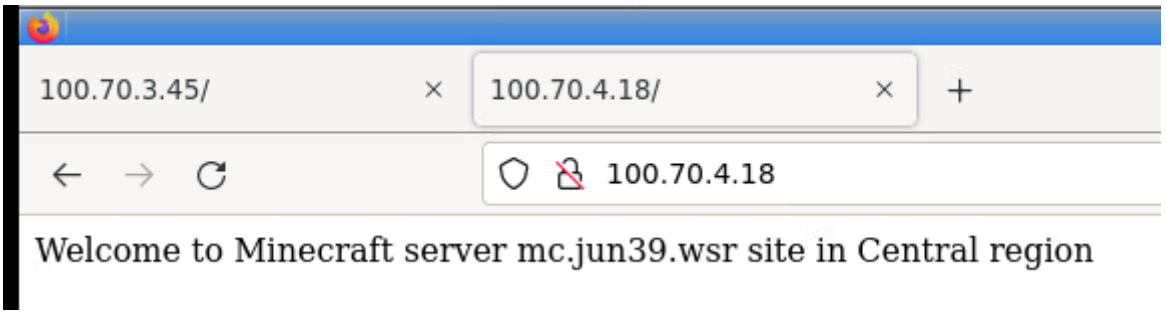
На ClientSPB в браузере вводим

http://100.70.3.45

http://100.70.4.18

http://100.70.7.99


100.70.3.45/
100.70.3.45
Welcome to Minecraft server mc.jun39.wsr site in European region


100.70.3.45/
100.70.4.18/
100.70.4.18
Welcome to Minecraft server mc.jun39.wsr site in Central region


100.70.3.45/
100.70.4.18/
100.70.7.99/
100.70.7.99
Welcome to Minecraft server mc.jun39.wsr site in Siberian region

Настройка DNS сервера

VDS

apt install bind9

nano /etc/bind/named.conf

Закомментируем последнюю строку

```
// If you are just adding zones, please do that in

include "/etc/bind/named.conf.options";
include "/etc/bind/named.conf.local";
#include "/etc/bind/named.conf.default-zones";
~
~
```

nano /etc/bind/named.conf.options

```
options {
        directory "/var/cache/bind";

        // If there is a firewall between you a
        // to talk to, you may need to fix the
        // ports to talk.  See http://www.kb.ce

        // If your ISP provided one or more IP
        // nameservers, you probably want to us
        // Uncomment the following block, and
        // the all-0's placeholder.

        forwarders {
                100.100.100.100;
        };
        forward first;

        //========================================
        // If BIND logs error messages about th
        // you will need to update your keys.
        //========================================
        dnssec-validation no;

        listen-on { any; };
        listen-on-v6 { none; };
        allow-query { any; };
};
~
```

systemctl restart bind9

systemctl status bind9

cp /etc/bind/db.local /var/cache/bind/jun39.wsr

nano /var/cache/bind/jun39.wsr

```
;
; BIND data file for local loopback interface
;
$TTL    604800
@       IN      SOA     jun39.wsr. root.jun39.wsr. (
                              2         ; Serial
                         604800         ; Refresh
                          86400         ; Retry
                        2419200         ; Expire
                         604800 )       ; Negative Cache TTL
;
@       IN      NS      jun39.wsr.
@       IN      A       100.70.6.12
```

cp /var/cache/bind/jun39.wsr /var/cache/bind/ams.jun39.wsr

nano /var/cache/bind/ams.jun39.wsr

```
;
; BIND data file for local loopback interface
;
$TTL    604800
@       IN      SOA     jun39.wsr. root.jun39.wsr.
                              2         ; Serial
                         604800         ; Refresh
                          86400         ; Retry
                        2419200         ; Expire
                         604800 )       ; Negative
;
@       IN      NS      jun39.wsr.
@       IN      A       100.70.6.12
web     IN      A       100.70.3.45
~
~
```

cp /var/cache/bind/jun39.wsr /var/cache/bind/msk.jun39.wsr

nano /var/cache/bind/msk.jun39.wsr

```
; BIND data file for local loopback interface
;
$TTL    604800
@       IN      SOA     jun39.wsr. root.jun39
                              2         ; Ser
                         604800         ; Ref
                          86400         ; Ret
                        2419200         ; Exp
                         604800 )       ; Neg
;
@       IN      NS      jun39.wsr.
@       IN      A       100.70.6.12
web     IN      A       100.70.4.18
~
~
```

cp /var/cache/bind/jun39.wsr /var/cache/bind/ikt.jun39.wsr

nano /var/cache/bind/ikt.jun39.wsr

```
; BIND data file for local loopback interface
;
$TTL    604800
@       IN      SOA     jun39.wsr. root.jun39
                              2         ; Ser
                         604800         ; Ref
                          86400         ; Ret
                        2419200         ; Exp
                         604800 )       ; Neg
;
@       IN      NS      jun39.wsr.
@       IN      A       100.70.6.12
web     IN      A       100.70.7.99
~
~
```

chown bind:bind /var/cache/bind/*

ls -l /var/cache/bind/

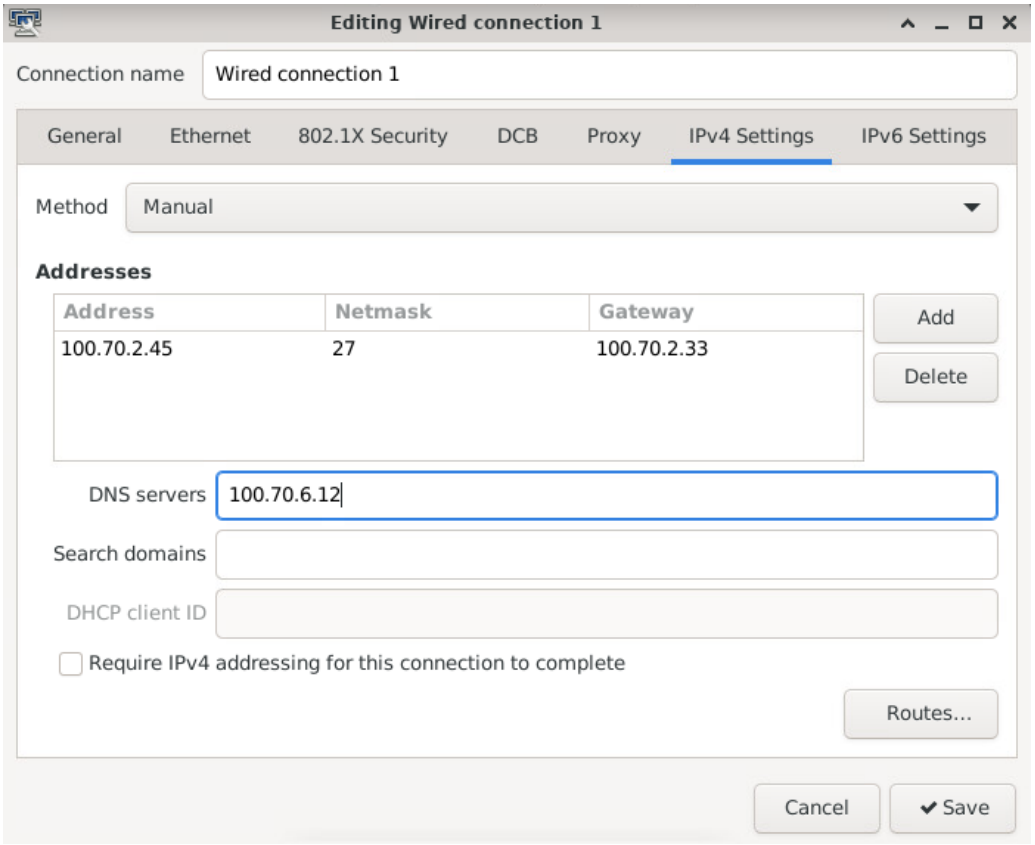
```
root@VDS:~# ls -l /var/cache/bind/
total 24
-rw-r--r-- 1 bind bind  279 Mar 30 13:13 ams.jun39.wsr
-rw-r--r-- 1 bind bind  279 Mar 30 13:14 ikt.jun39.wsr
-rw-r--r-- 1 bind bind  259 Mar 30 13:09 jun39.wsr
-rw-r--r-- 1 bind bind  221 Mar 30 13:03 managed-keys.bind
-rw-r--r-- 1 bind bind 1426 Mar 30 13:03 managed-keys.bind.jnl
-rw-r--r-- 1 bind bind  279 Mar 30 13:13 msk.jun39.wsr
root@VDS:~#
```

```
nano /etc/bind/named.conf.local

view "ams" {
  match-clients { 100.70.2.45; };
  zone "jun39.wsr" {
    type master;
    file "/var/cache/bind/ams.jun39.wsr";
  };
};

view "msk" {
  match-clients { 100.70.5.55; };
  zone "jun39.wsr" {
    type master;
    file "/var/cache/bind/msk.jun39.wsr";
  };
};

view "ikt" {
  match-clients { 100.70.8.78; };
  zone "jun39.wsr" {
    type master;
    file "/var/cache/bind/ikt.jun39.wsr";
  };
};

view "Default" {
  match-clients { any; };
  zone "jun39.wsr" {
    type master;
    file "/var/cache/bind/jun39.wsr";
  };
};
systemctl restart bind9
systemctl status bind9
```

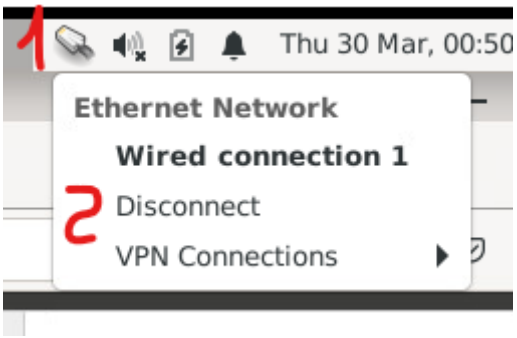
```
root@VDS:~# systemctl status bind9
● named.service - BIND Domain Name Server
     Loaded: loaded (/lib/systemd/system/named.service; enabled; vendor preset:
     Active: active (running) since Thu 2023-03-30 13:26:06 +05; 6s ago
       Docs: man:named(8)
   Main PID: 3856 (named)
      Tasks: 6 (limit: 2337)
     Memory: 29.8M
        CPU: 76ms
     CGroup: /system.slice/named.service
             └─3856 /usr/sbin/named -f -u bind

Mar 30 13:26:06 VDS named[3856]: managed-keys-zone/ams: loaded serial 0
Mar 30 13:26:06 VDS named[3856]: managed-keys-zone/msk: loaded serial 0
Mar 30 13:26:06 VDS named[3856]: managed-keys-zone/ikt: loaded serial 0
Mar 30 13:26:06 VDS named[3856]: managed-keys-zone/Default: loaded serial 0
Mar 30 13:26:06 VDS named[3856]: zone jun39.wsr/IN/ams: loaded serial 2
Mar 30 13:26:06 VDS named[3856]: zone jun39.wsr/IN/msk: loaded serial 2
Mar 30 13:26:06 VDS named[3856]: zone jun39.wsr/IN/ikt: loaded serial 2
Mar 30 13:26:06 VDS named[3856]: zone jun39.wsr/IN/Default: loaded serial 2
Mar 30 13:26:06 VDS named[3856]: all zones loaded
Mar 30 13:26:06 VDS named[3856]: running
root@VDS:~#
```

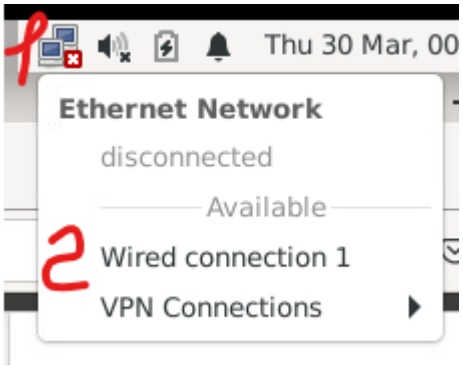
ClientEU

Меняем адрес DNS сервера с 100.100.100.100 на 100.70.6.12

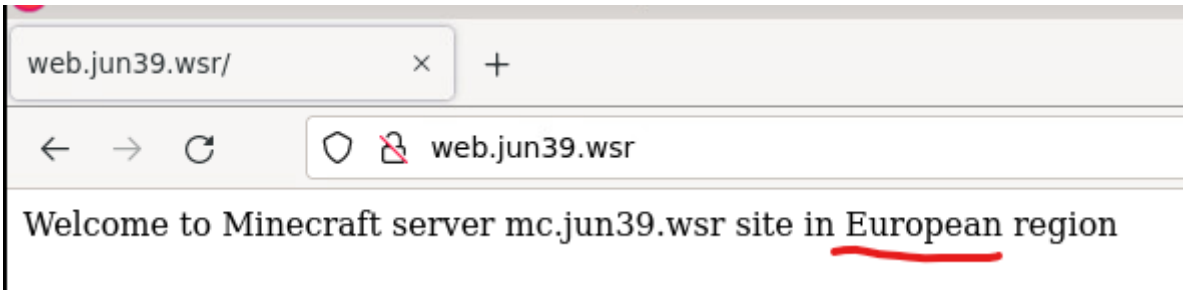


Перезапускаем сетевое подключение





В браузере вводим http://web.jun39.wsr, должен открыться сайт с APP-AMS

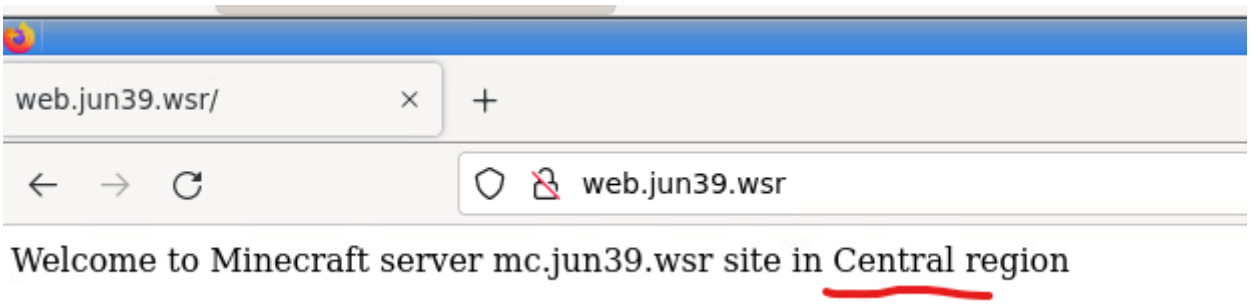


ClientSPB

Меняем адрес DNS сервера с 100.100.100.100 на 100.70.6.12

Перезапускаем сетевое подключение

В браузере вводим http://web.jun39.wsr, должен открыться сайт с APP-MSK



ClientVV

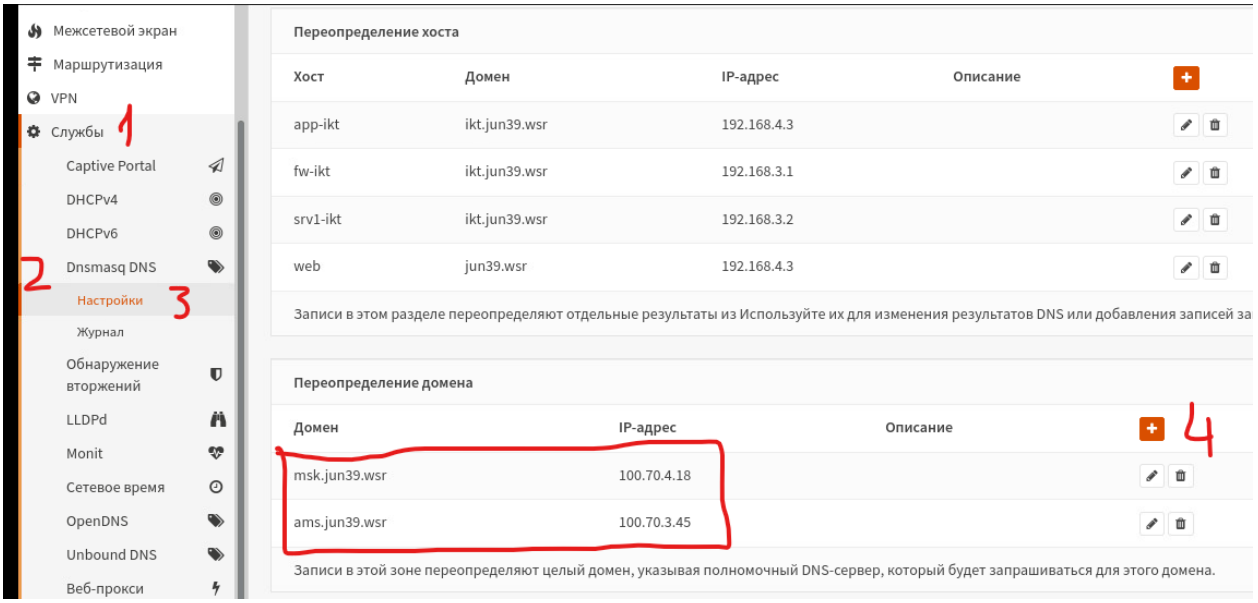
Меняем адрес DNS сервера с 100.100.100.100 на 100.70.6.12

Перезапускаем сетевое подключение

В браузере вводим http://web.jun39.wsr, должен открыться сайт с APP-IKT

Настройка инфраструктуры DNS для доступа к другим филиалам по доменным именам

FW-IKT



Настройка IPSEC

https://docs.opnsense.org/manual/how-tos/ipsec-s2s-route.html

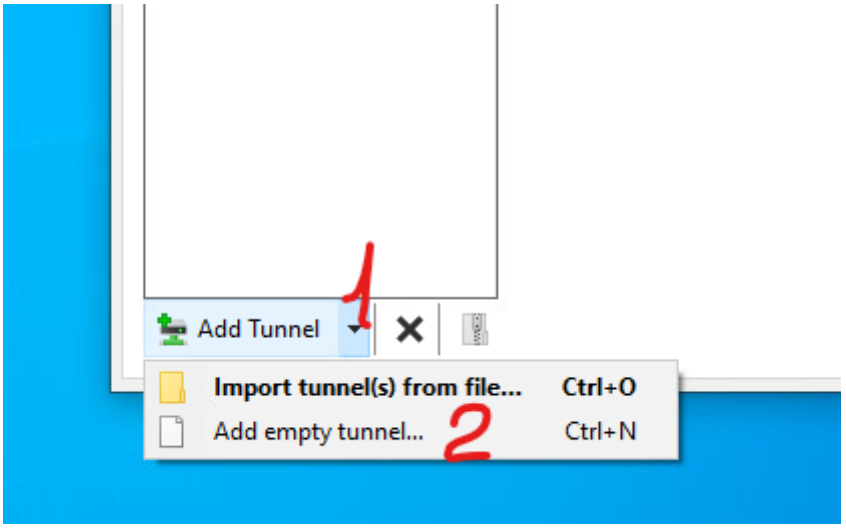
VPN

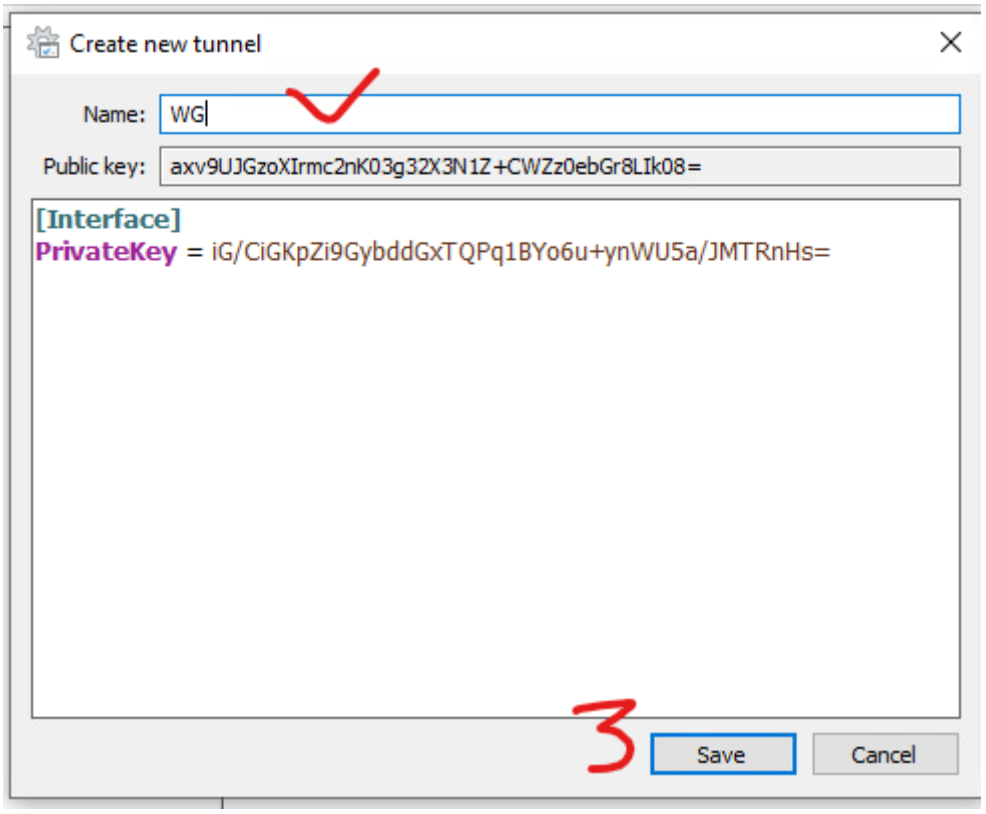
VPNClient

На VPNClient скачиваем и устанавливаем wireguard клиент

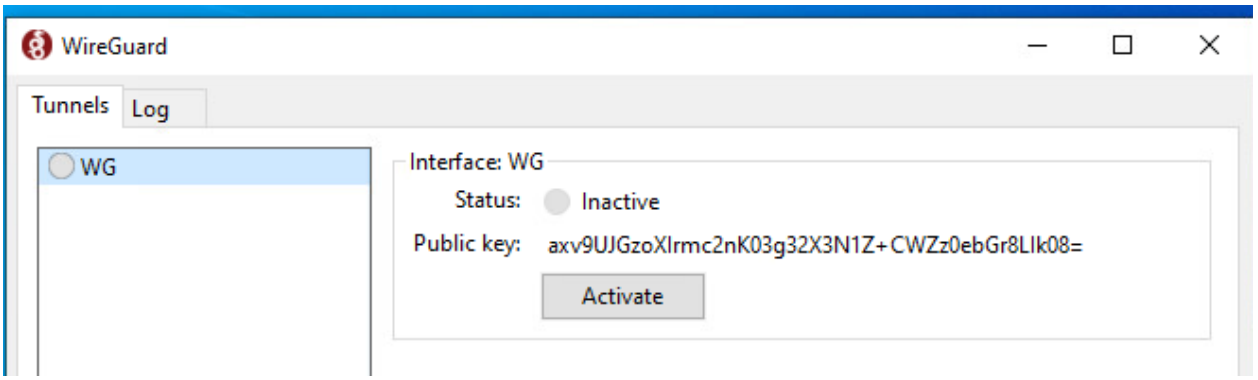
https://www.wireguard.com/install/

Запускаем Wireguard и создаем новый туннель





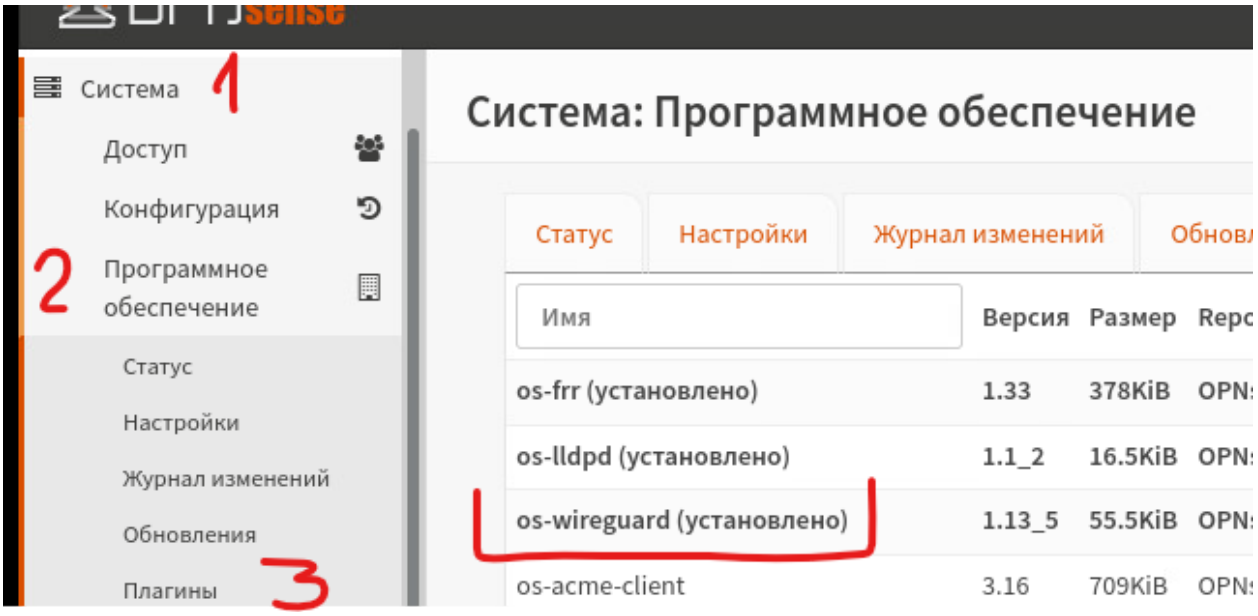
Получаем

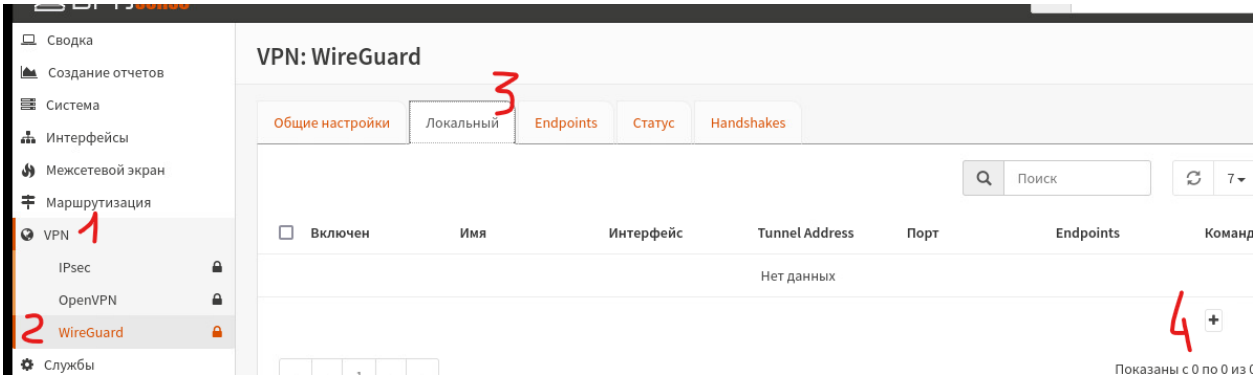

WireGuard
Tunnels
Log
WG
Interface: WG
Status:
Inactive
Public key:
axv9UJGzoXlrmc2nK03g32X3N1Z+CWZz0ebGr8LIk08=
Activate

FW-MSK

https://docs.opnsense.org/manual/how-tos/wireguard-client.html

Устанавливаем плагин os-wireguard





Edit Local Configuration

расширенный режим | справка

Включен	☑
Имя	WG
Instance	1
Public Key	
Private Key	
Порт прослушивания	51820
Tunnel Address	10.10.12.1/24 × Очистить все Copy
Peers	Ничего не выбрано Очистить все
Disable Routes	☐

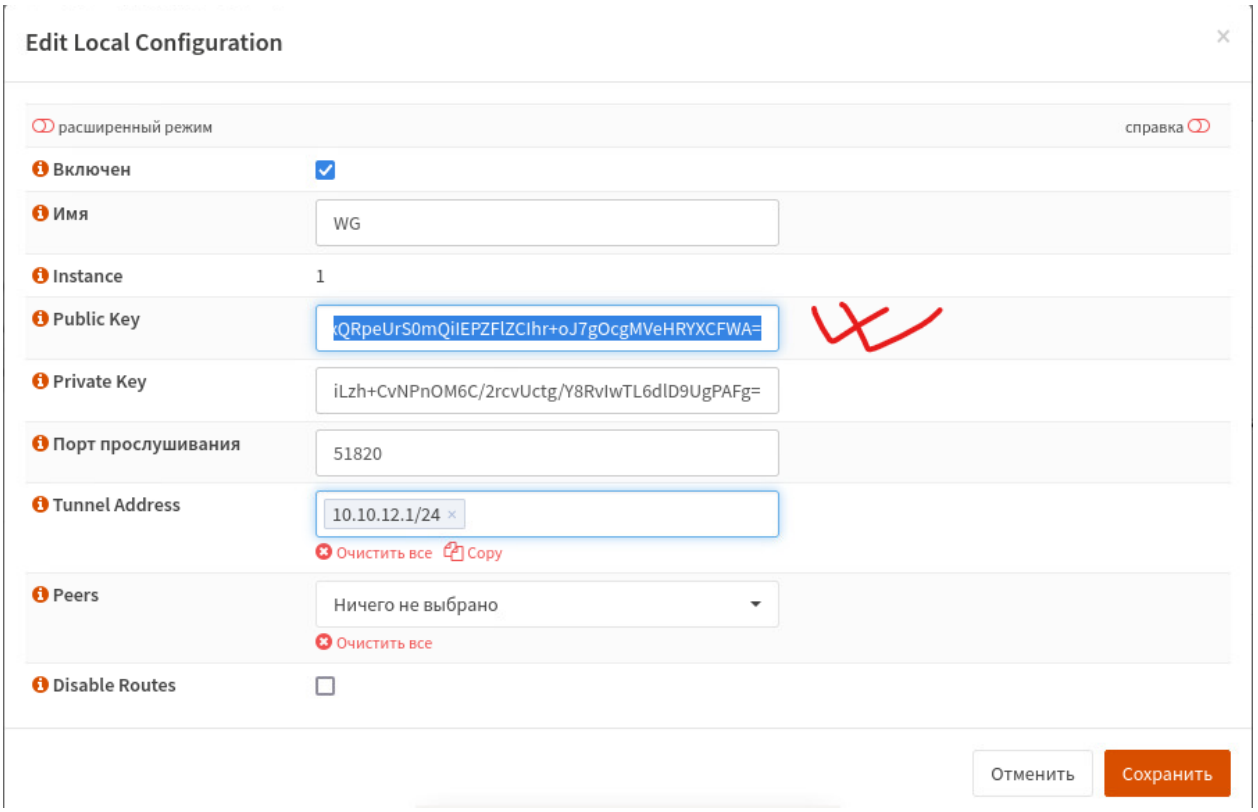
5

Отменить | Сохранить

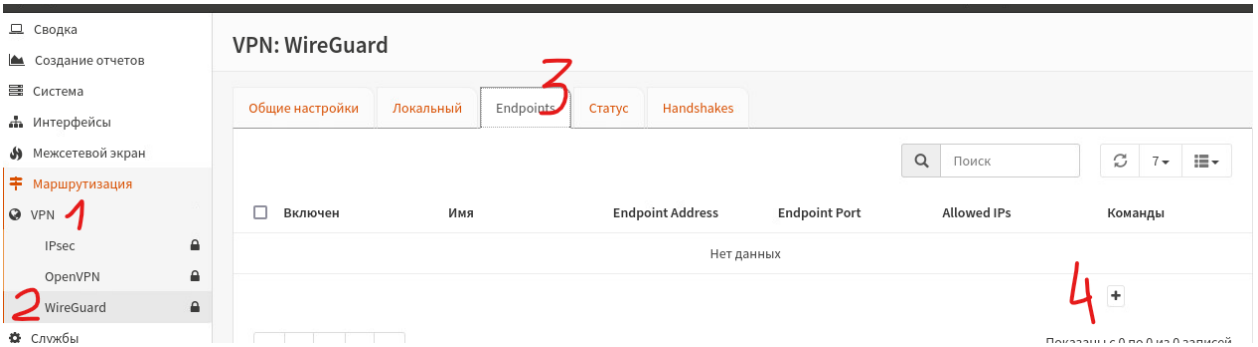
Общие настройки | Локальный | Endpoints | Статус | Handshakes

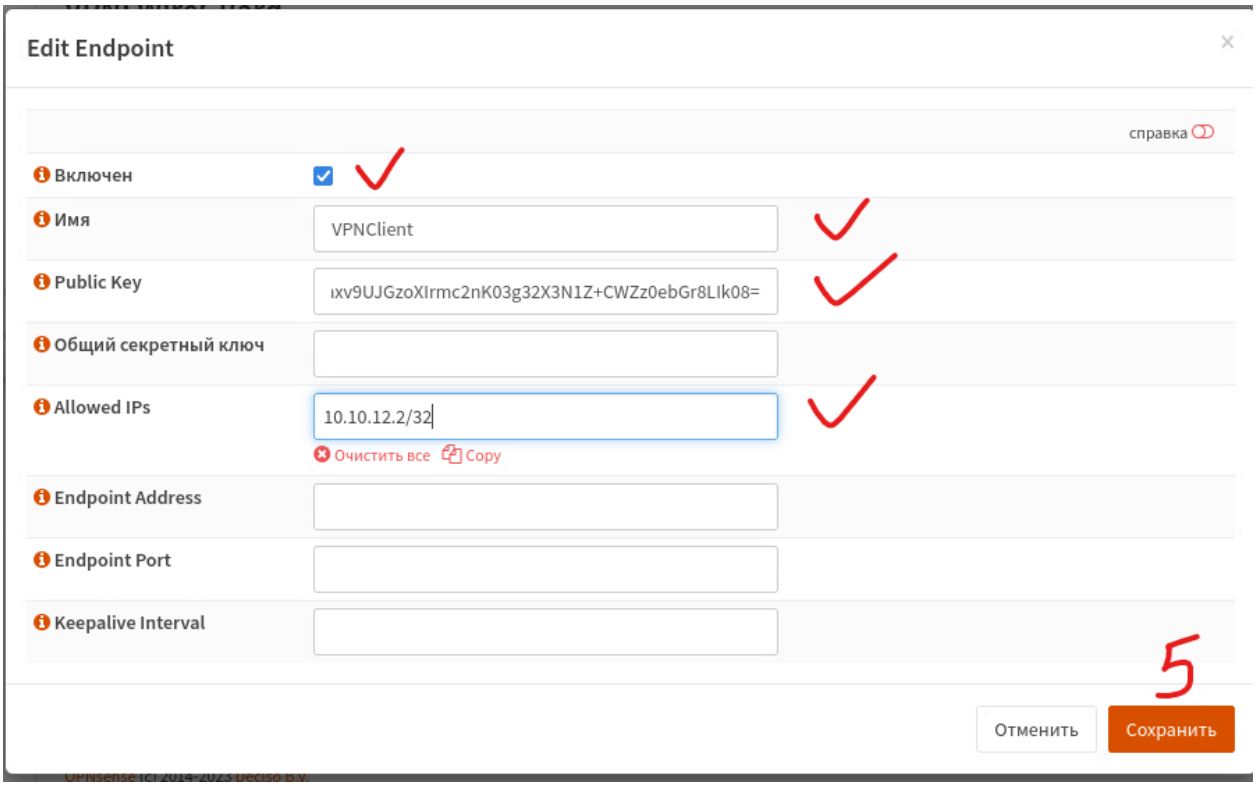
Поиск | 7

Включен	Имя	Интерфейс	Tunnel Address	Порт	Endpoints	Команды
☑	WG	wg1	10.10.12.1/24	51820		6

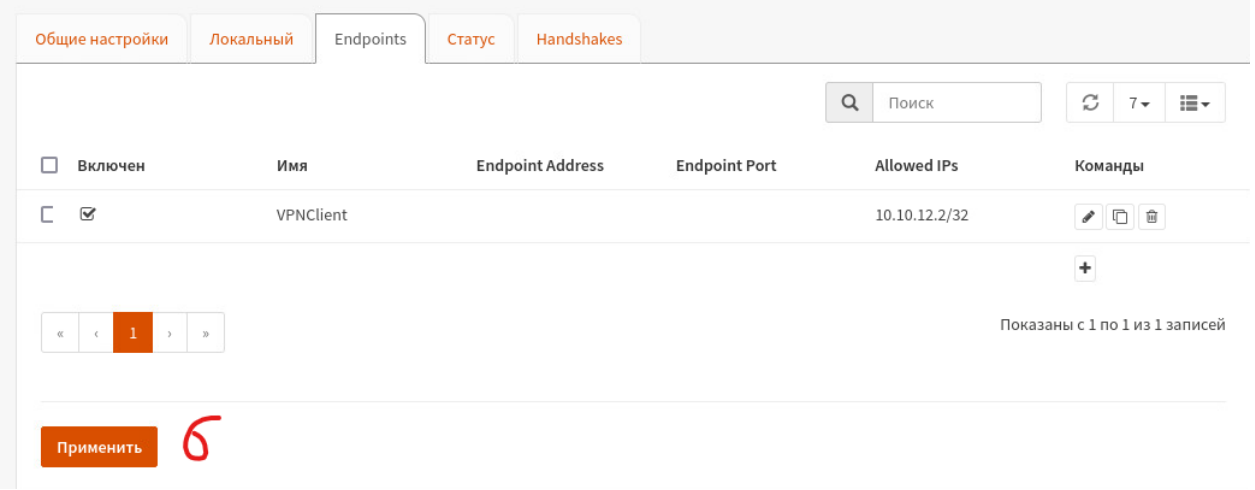


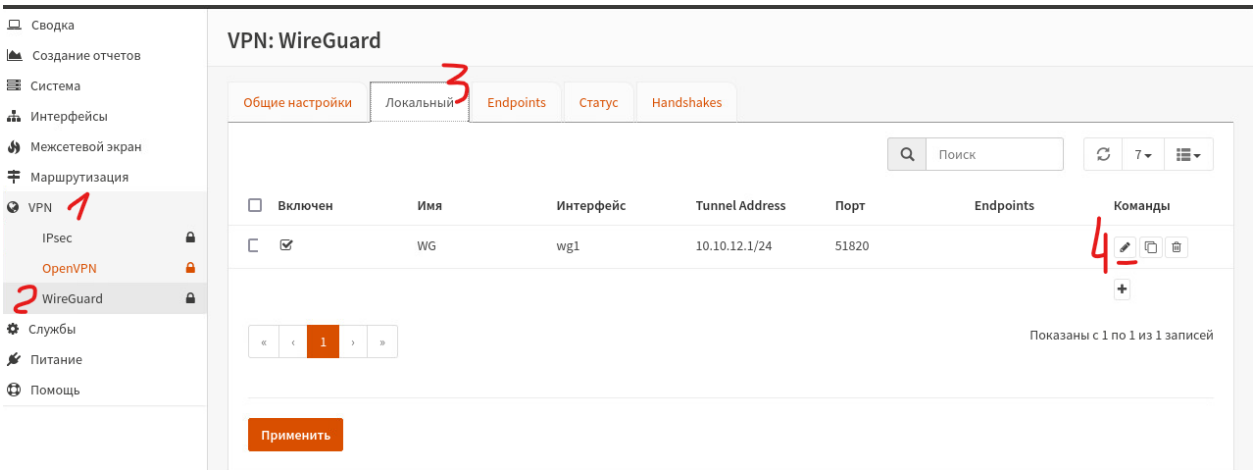
Нужно сохранить Peblic Key

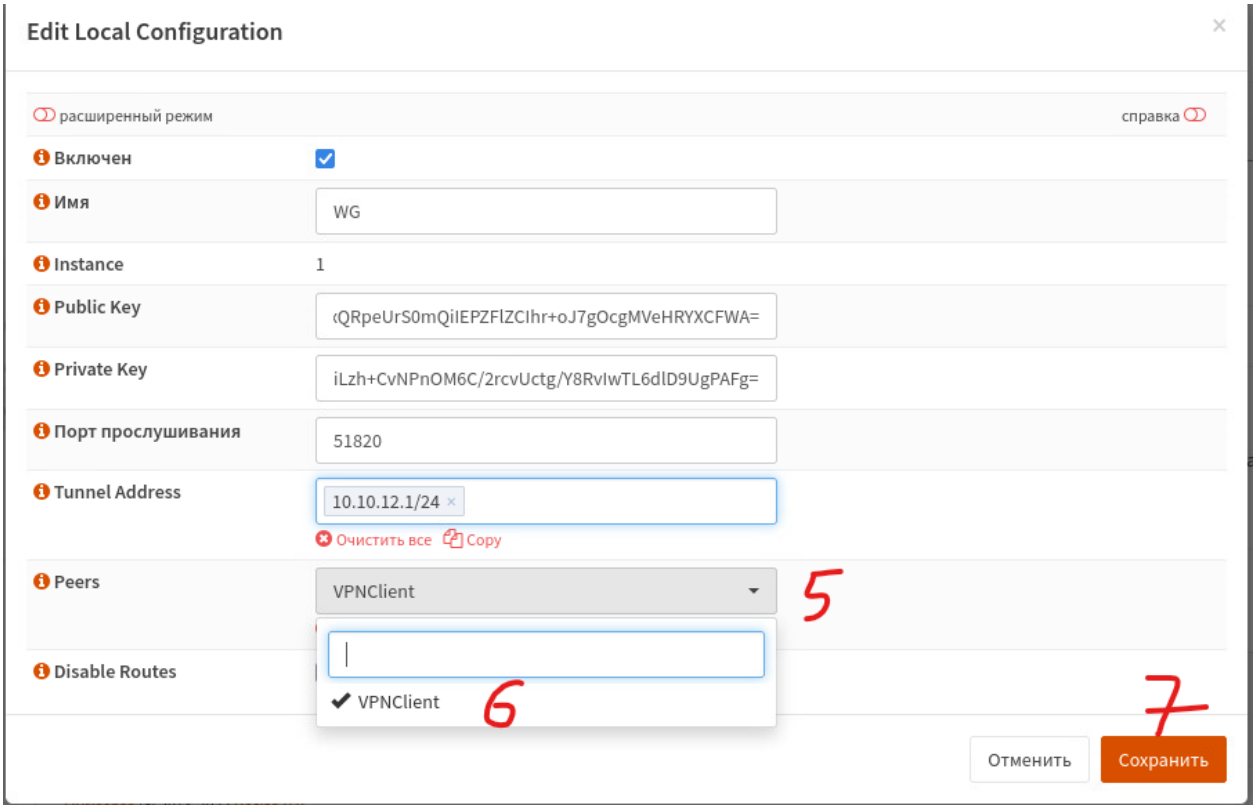


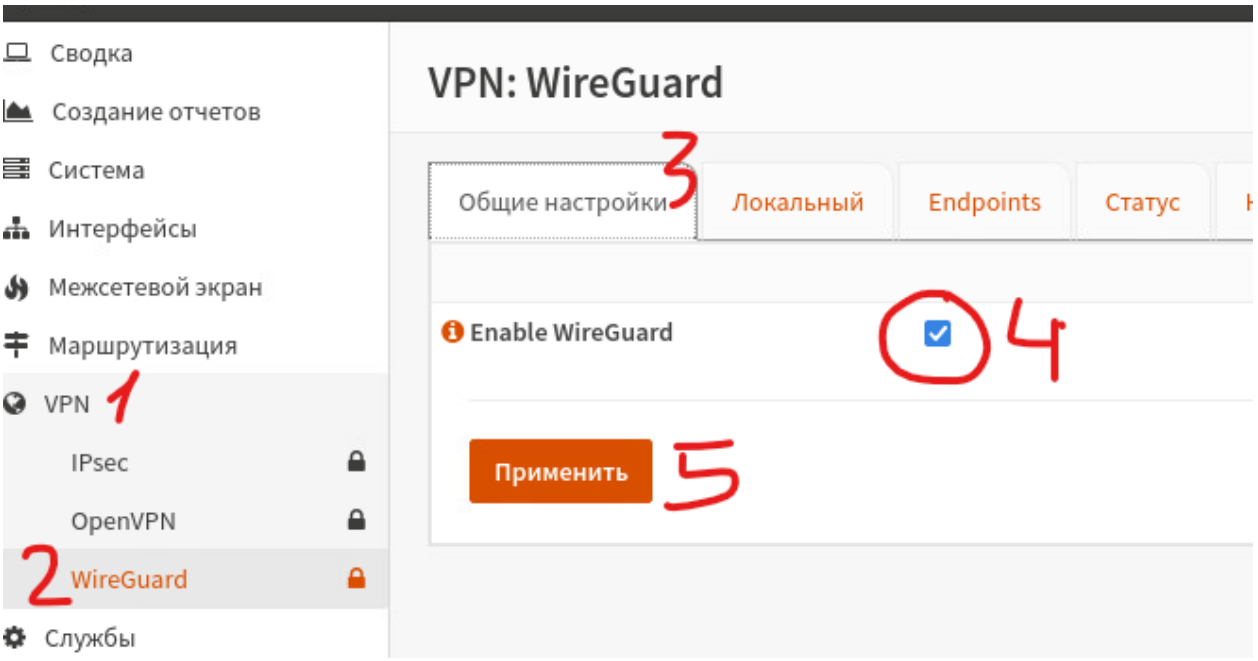


ВНИМАНИЕ Public Key берется от VPNClient




Сводка
Создание отчетов
Система
Интерфейсы
Межсетевой экран
Маршрутизация
VPN
1
IPsec
OpenVPN
2
WireGuard
Службы
Питание
Помощь
VPN: WireGuard
Общие настройки
Локальный
3
Endpoints
Статус
Handshakes
Поиск
Включен
Имя
Интерфейс
Tunnel Address
Порт
Endpoints
Команды
WG
wg1
10.10.12.1/24
51820
4
Показаны с 1 по 1 из 1 записей
Применить


Edit Local Configuration
расширенный режим
справка
Включен
Имя
WG
Instance
1
Public Key
QRpeUrS0mQiIEPZFlZCIhr+oJ7gOcgMVeHRYXCFWA=
Private Key
iLzh+CvNPnOM6C/2rcvUctg/Y8RvIwTL6dlD9UgPAFg=
Порт прослушивания
51820
Tunnel Address
10.10.12.1/24
Очистить все
Copy
Peers
VPNClient
5
VPNClient
6
Disable Routes
7
Отменить
Сохранить


Сводка
Создание отчетов
Система
Интерфейсы
Межсетевой экран
Маршрутизация
VPN
1
IPsec
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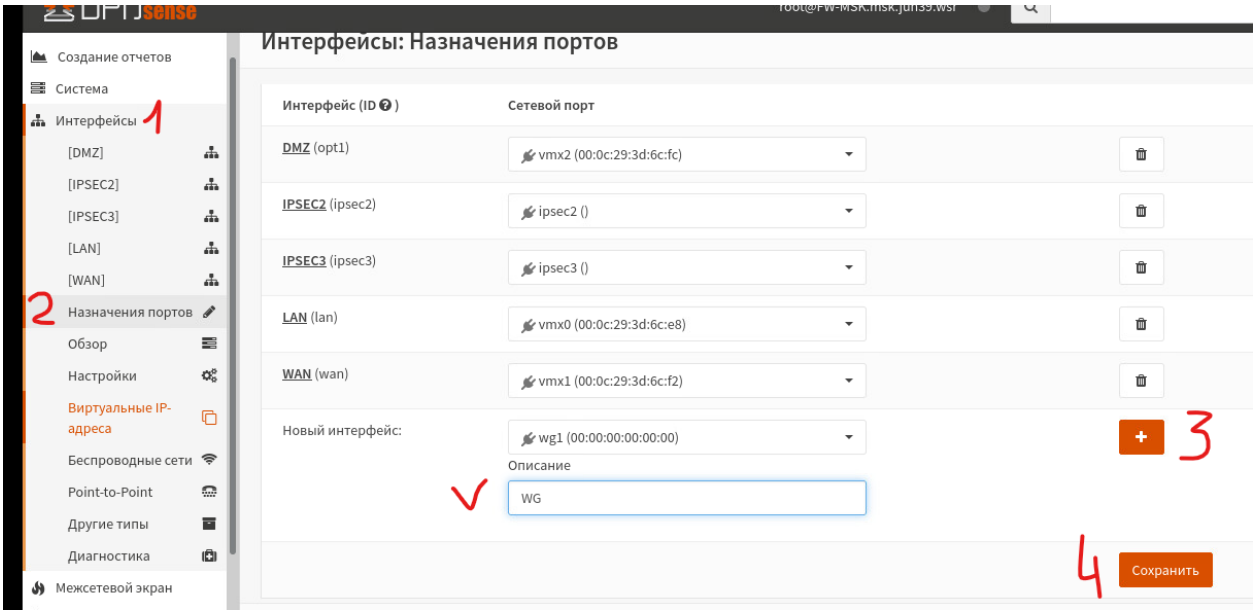
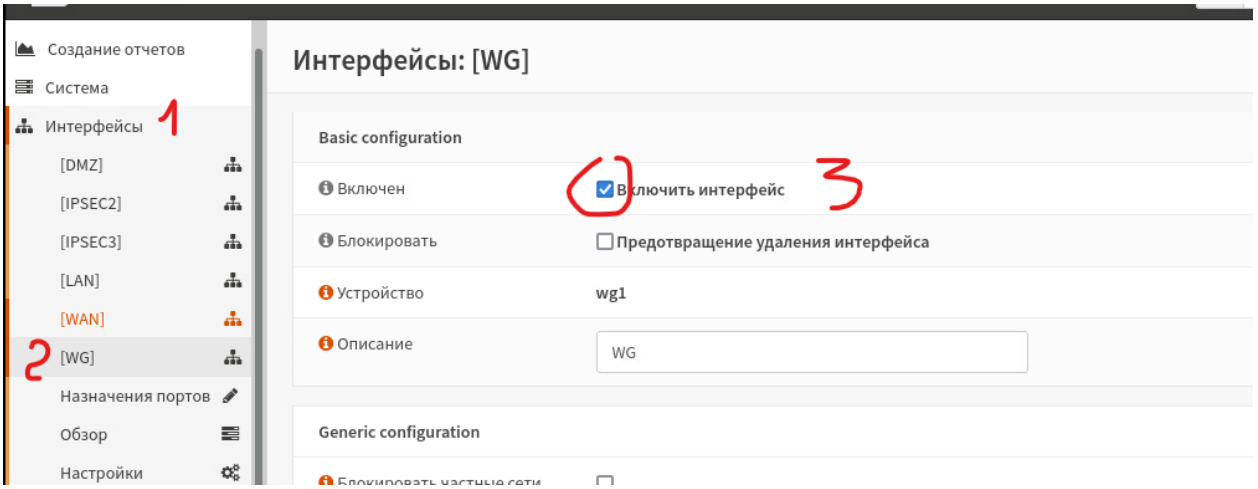
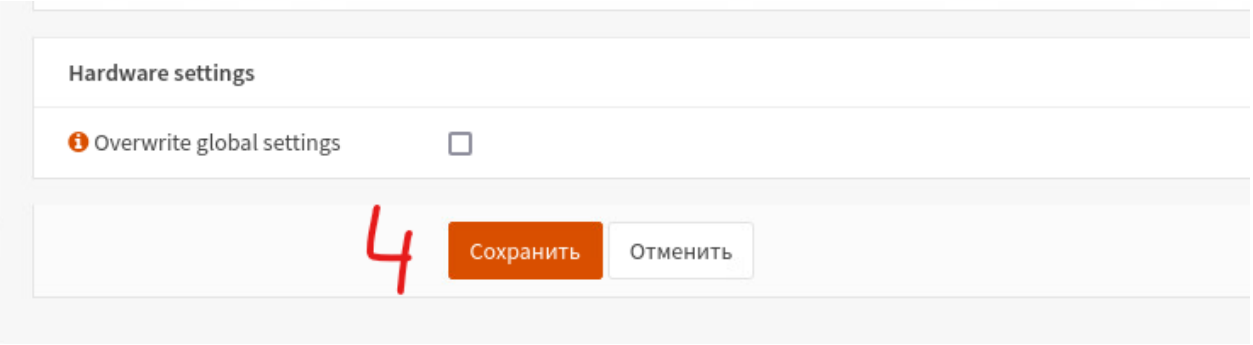
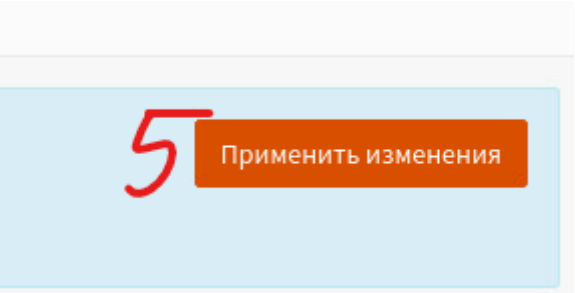
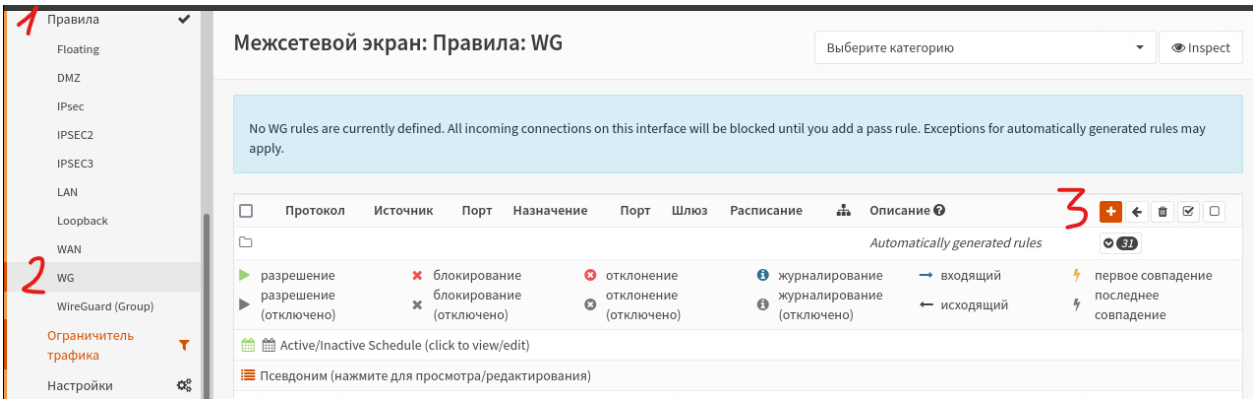
WireGuard
Службы
VPN: WireGuard
Общие настройки
3
Локальный
Endpoints
Статус
Enable WireGuard
4
Применить
5

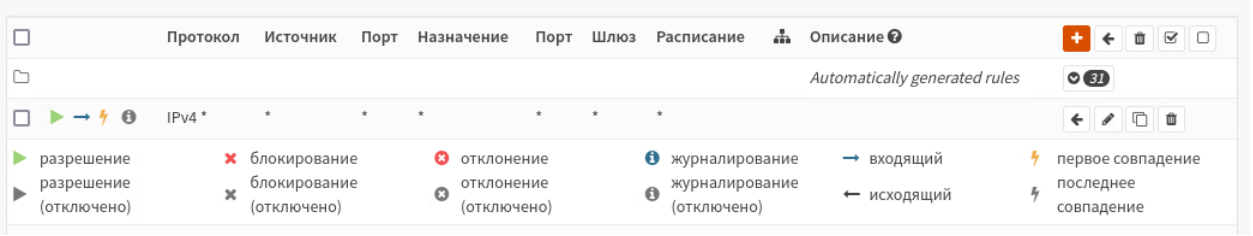

Создание отчетов
Система
Интерфейсы
1
[DMZ]
[IPSEC2]
[IPSEC3]
[LAN]
[WAN]
2
Назначения портов
Обзор
Настройки
Виртуальные IP-адреса
Беспроводные сети
Point-to-Point
Другие типы
Диагностика
Межсетевой экран
Интерфейсы: Назначения портов
Интерфейс (ID)
Сетевой порт
DMZ (opt1)
vmx2 (00:0c:29:3d:6c:fc)
IPSEC2 (ipsec2)
ipsec2 ()
IPSEC3 (ipsec3)
ipsec3 ()
LAN (lan)
vmx0 (00:0c:29:3d:6c:e8)
WAN (wan)
vmx1 (00:0c:29:3d:6c:f2)
Новый интерфейс:
wg1 (00:00:00:00:00:00)
3
Описание
WG
4
Сохранить


Создание отчетов
Система
Интерфейсы
1
[DMZ]
[IPSEC2]
[IPSEC3]
[LAN]
[WAN]
2
[WG]
Назначения портов
Обзор
Настройки
Интерфейсы: [WG]
Basic configuration
Включен
Включить интерфейс
3
Блокировать
Предотвращение удаления интерфейса
Устройство
wg1
Описание
WG
Generic configuration

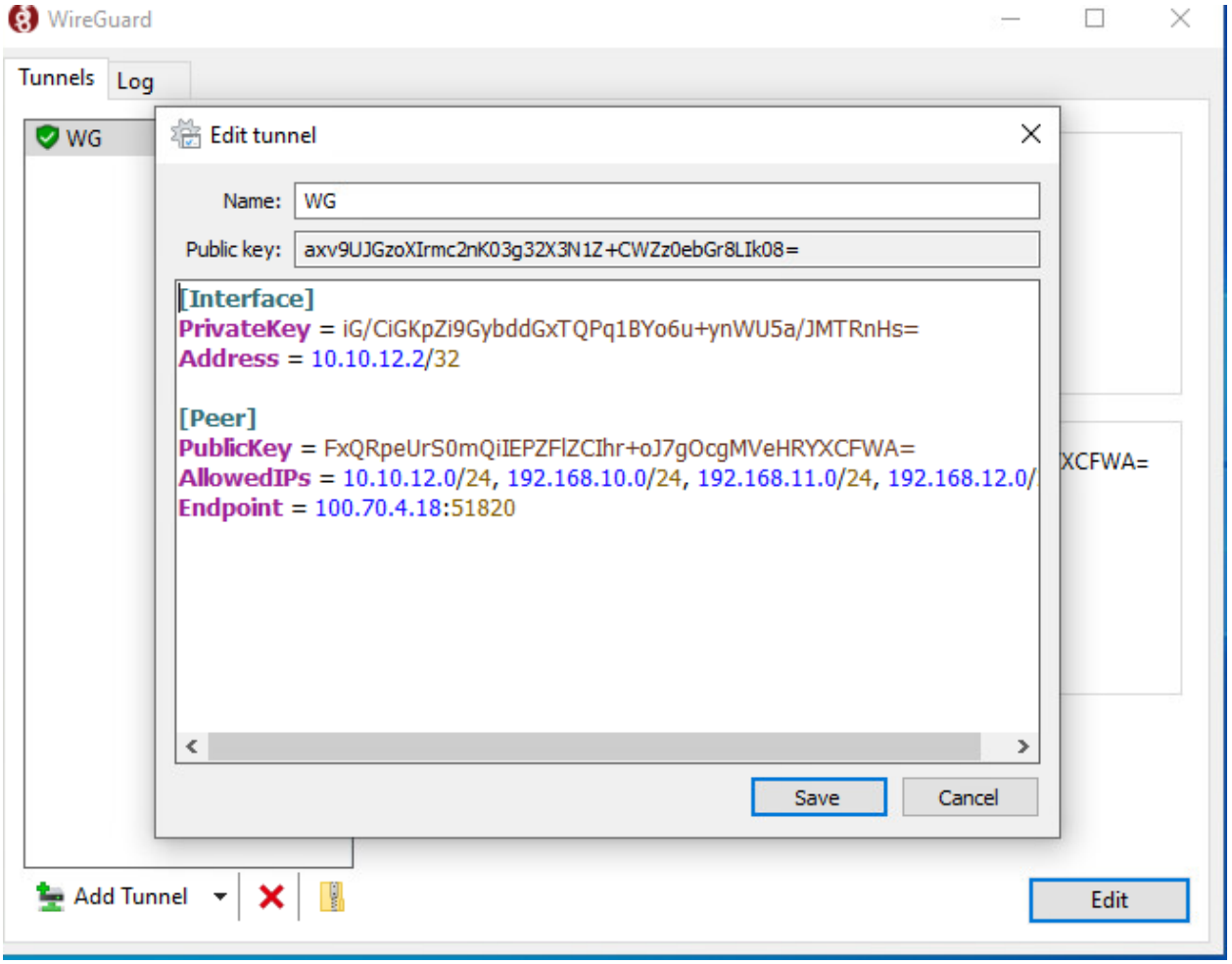




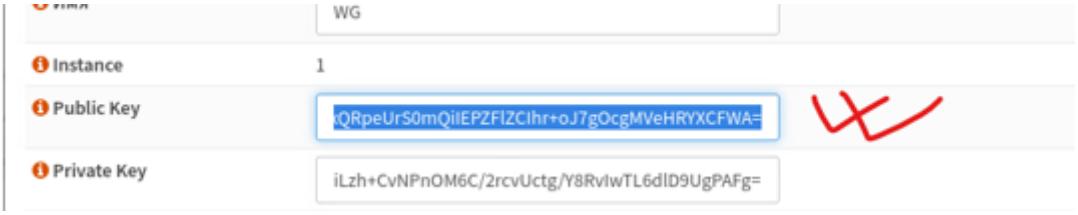


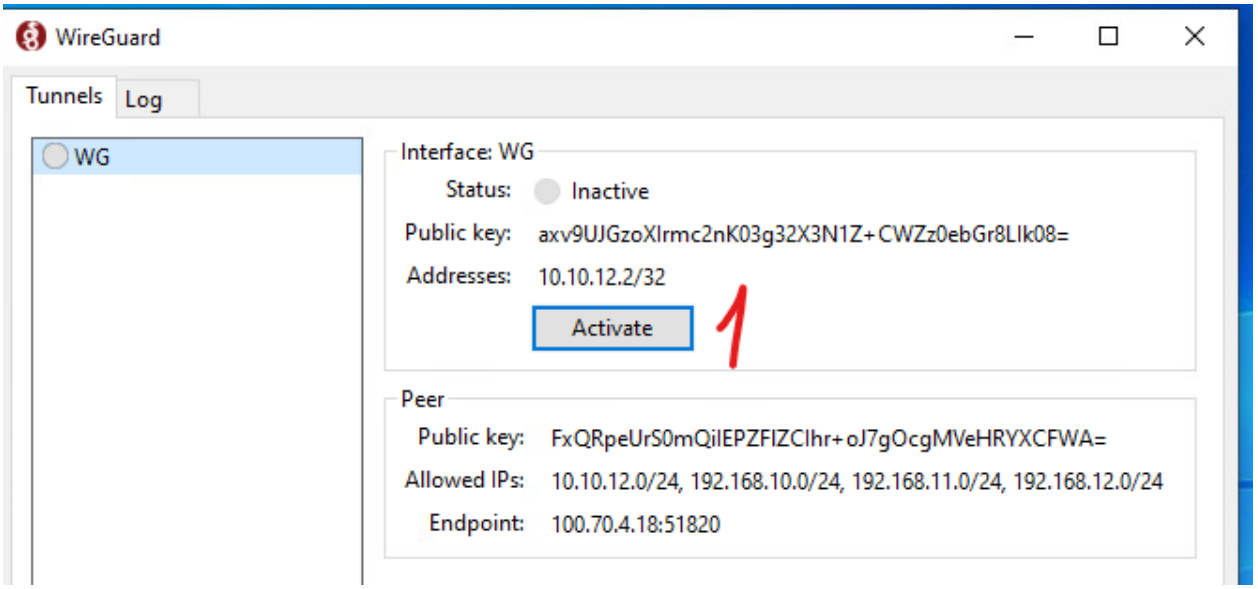


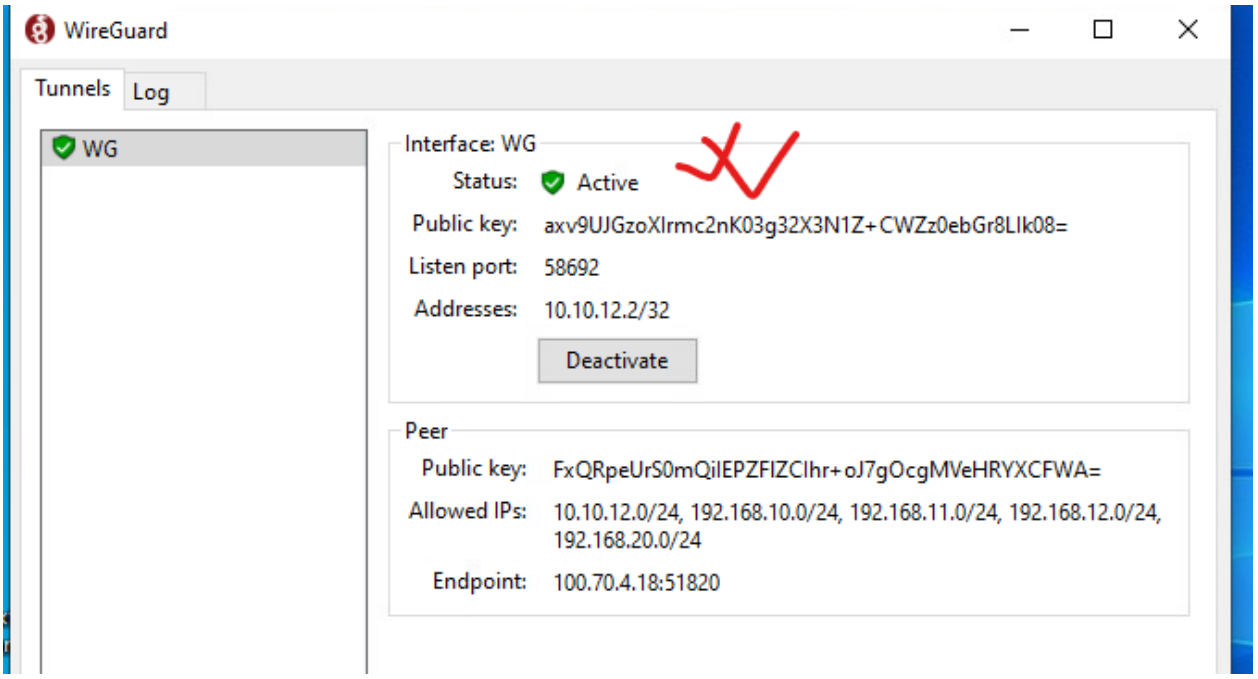
На VPNClient



Где [Peer] PublicKey = Публичный ключ FW







Проверка

ping 192.168.12.2

ping 192.168.12.3

ping 192.168.20.2

Настройка журналирования

SRV1-MSK

mkdir /opt/logs

chmod 777 /opt/logs/

nano /etc/rsyslog.conf

#Раскомментируем 2 строчки (убирает #)

module(load=”imudp”)

input(type=”imudp port=”514”)

module(load=”imtcp”)

input(type=”imtcp port=”514”)

В добавляем

$template RemoteLogs,"/opt/log/%HOSTNAME%/%HOSTNAME%.log"

. ?RemoteLogs

```
# provides UDP syslog reception
module(load="imudp")
input(type="imudp" port="514")

# provides TCP syslog reception
module(load="imtcp")
input(type="imtcp" port="514")


$template RemoteLogs,"/opt/logs/%HOSTNAME%/%HOSTNAME%.log"
*.* ?RemoteLogs
```

systemctl restart rsyslog

systemctl status rsyslog

SRV2-MSK

nano /etc/rsyslog.conf

В конце файла добавляем

*.warn @192.168.12.2

systemctl restart rsyslog

systemctl status rsyslog

Проверка

logger -p local4.warn "Warning SRV2-MSK"

PC-MSK

nano /etc/rsyslog.conf

В конце файла добавляем

*.err @192.168.12.2

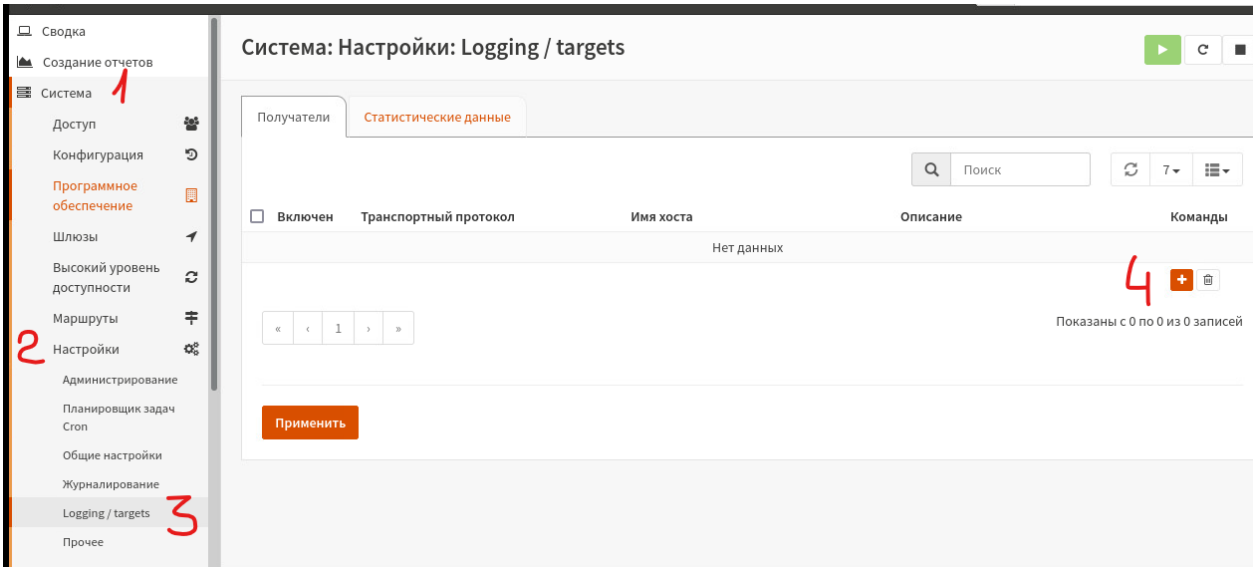
systemctl restart rsyslog

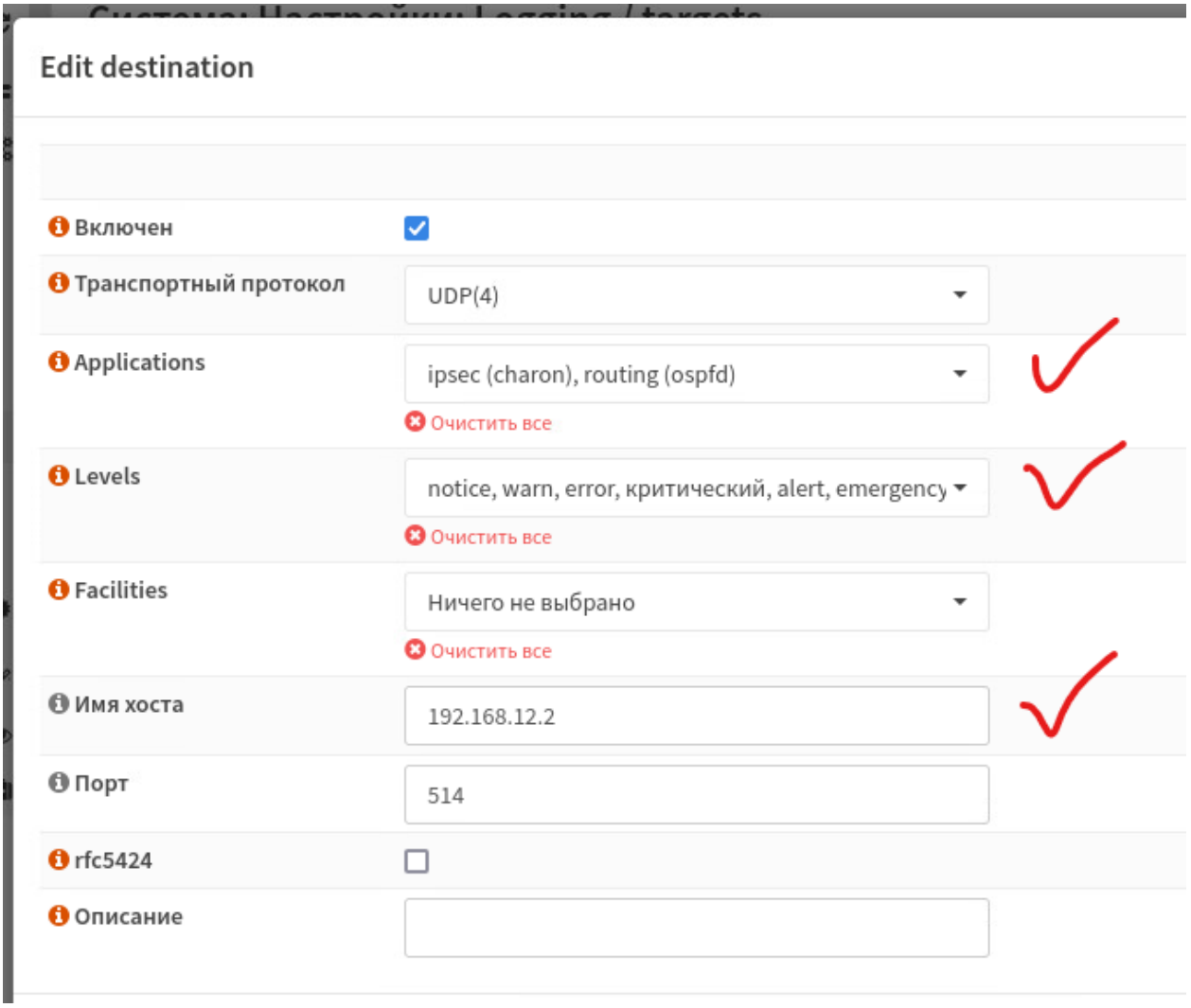
systemctl status rsyslog

Проверка

logger -p local4.err "Error PC-MSK"

FW-MSK


Сводка
Создание отчетов
Система
1
Доступ
Конфигурация
Программное обеспечение
Шлюзы
Высокий уровень доступности
Маршруты
2
Настройки
Администрирование
Планировщик задач Cron
Общие настройки
Журналирование
Logging / targets
3
Прочее
Система: Настройки: Logging / targets
Получатели
Статистические данные
Поиск
Включен
Транспортный протокол
Имя хоста
Описание
Команды
Нет данных
4
Показаны с 0 по 0 из 0 записей
Применить


Edit destination
Включен
Транспортный протокол
UDP(4)
Applications
ipsec (charon), routing (ospfd)
Очистить все
Levels
notice, warn, error, критический, alert, emergency
Очистить все
Facilities
Ничего не выбрано
Очистить все
Имя хоста
192.168.12.2
Порт
514
rfc5424
Описание